REPORT RESUMES

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THE PROCESS AND PRODUCT OF T AND I HIGH SCHOOL LEVEL VOCATIONAL EDUCATION IN THE UNITED STATES, THE PRODUCT.

BY- ENINGER, MAX U.
AMERICAN INST. FOR RESEARCH IN BEHAVIORAL SCIENCES

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DESCRIPTORS- *TRADE AND INDUSTRIAL EDUCATION, *HIGH SCHOOL GRADUATES, OPINIONS, VOCATIONAL HIGH SCHOOLS, COMPREHENSIVE HIGH SCHOOLS, NATIONAL SURVEYS, *GRADUATE SURVEYS, RACIAL CHARACTERISTICS, PILOT PROJECTS, *STUDENT ENROLLMENT, EMPLOYMENT, QUESTIONNAIRES, WAGES, GEOGRAPHIC REGIONS, *COMPARATIVE ANALYSIS, COUNSELORS, OCCUPATIONAL INFORMATION, JOB PLACEMENT, EDUCATIONAL EQUIPMENT, MALES, CITIZEN PARTICIPATION, POSTSECONDARY EDUCATION, ENROLLMENT INFLUENCES, OCCUPATIONAL MOBILITY, JOB SKILLS, PITTSBURGH

THE OBJECTIVES WERE--(1) TO DESCRIBE THE OCCUPATIONAL, EDUCATIONAL, AND RELATED EXPERIENCES OF TRADE AND INDUSTRIAL GRADUATES OF 1953, 1958, AND 1962, AND (2) TO COMPARE THE EXPERIENCES FOR VOCATIONAL AND ACADEMIC GRADUATES OF THE SAME CLASSES AND SCHOOLS. DATA WERE COLLECTED BY QUESTIONNAIRES FROM 5,327 VOCATIONAL GRADUATES AND 1,780 ACADEMIC GRADUATES WHO ATTENDED 100 HIGH SCHOOL IN EIGHT GEOGRAPHIC REGIONS OF THE UNITED STATES. THE DATA WERE ANALYZED AND PRESENTED IN TERMS OF--(1) GENERAL VERSUS VOCATIONAL EDUCATION, (2) VOCATIONAL VS. COMPREHENSIVE SCHOOLS, AND (3) SMALL VS. LARGE SCHOOLS. A 5 PERCENT CORRECTIVE SAMPLE WAS SELECTED FOR INTENSIVE FOLLOWUP OF NONRESPONDENTS, AND A SIMILAR SAMPLE WITH UNKNOWN ADDRESSES WAS PURSUED. DERIVED MEASURE INTERCORRELATIONS FOR 45 OCCUPATIONAL MEASURES, 28 NONOCCUPATIONAL MEASURES, AND 80 OCCUPATIONAL-NONOCCUPATIONAL MEASURES WERE OBTAINED BY THE PEARSON PRODUCT MOMENT CORRELATION METHOD. REASONS FOR NOT GETTING JOBS WERE NOT SIGNIFICANTLY DIFFERENT FOR VOCATIONAL AND COMPREHENSIVE GRADUATES. HELP IN FINDING THE FIRST JOB WAS OBTAINED FROM A FRIEND OR RELATIVE 38 PERCENT OF THE TIME AND FROM A COUNSELOR 5 PERCENT OF THE TIME. GRADUATES OF MEDIUM-SIZED SCHOOLS FELT LESS NEED FOR ADDITIONAL TRAINING IN BASIC SKILLS. THERE WAS NO SIGNIFICANT DIFFERENCE IN THE NUMBER OF FULL-TIME JOBS HELD BY ACADEMIC AND VOCATIONAL GRADUATES OR IN THEIR JOB SATISFACTION. (EM)

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THE PRODUCT

September 1965

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THE PROCESS AND PRODUCT OF T&I HIGH SCHOOL LEVEL VOCATIONAL EDUCATION IN THE UNITED STATES

THE PRODUCT

Prepared By:

MAX U. ENINGER
Project Director

SEPTEMBER 1965

AMERICAN INSTITUTES FOR RESEARCH
Pittsburgh, Pennsylvania

FOREWORD

" . . . . . and the acid test of the quality of the vocational program is placement of graduates in the occupations for which they received instruction."

President's Panel of Consultants
Vocational Education, United States
Department of Health, Education and
Welfare

There have been many excellent studies of the placement of vocational graduates over the years. None have provided a nationwide picture. The present study aims to do so. Its primary purpose is to describe the essential occupational, educational and other dimensions of post-graduation experiences.

It is the intent of this report to bring the facts to the community of education with a minimum intrusion of researcher opinions, beliefs and attitudes. If some of the facts are provocative, the task will have been worthwhile.

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For making the study possible, and for giving the project freedom to determine and pursue its objectives, THE FORD FOUNDATION is warmly acknowledged.

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Quarterly Review Committee

John C. Flanagan, President, A.I.R.
Robert M. Gagné, Director of Research, A.I.R.
James W. Altman, Institute Director, A.I.R.

Project Personnel

Austina Bradley
Susan Cohen
Calvin Cotrell
John Fetter
Christine Hamm
Vivian Hudak
Alfred Junz
Barbara Malczak
Donald Meagley
William Rankin

Project Affiliates

Lawrence Borosage
Mary Byrnes
June Cotrell
Mary P. Fall
Walter Jones
Benjamin Wolk

Data Form Advisory Panel

W. M. Arnold
A. W. Beattie
Rupert N. Evans
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Sidney Marland, Jr.
William J. Micheels
Joseph T. Nerden
Duane M. Nielson
Thomas Pryde
Byrl R. Shoemaker
John W. Struck

ACKNOWLEDGMENTS (continued)

High School Principals and Directors

George A. Abner
Edward Amejko
Gerard Anderson
James Babb
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Ben Becker
R. L. Benoit
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Roger Berry
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Thomas F. Garvey
James Gholson
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Alvis Hanna
John P. Harrington
Claude Howard
C. B. Hurst
Robert Jackson
Norman Jensen
Aubrey Johnson

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F. G. Kalin
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Marvin Whitney
James H. Williams
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C. L. Greiber, Wis.
Sherrill D. McMillen, W. Va.
James G. Hook, Wyo.

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John E. Londahl
C. L. Lowman
Robert E. Martin
Leon P. Minear
Herbert Righthand
D. F. Rios
Lowell B. Selby
J. Chester Swanson
C. R. Wright

Graphic Arts Services

Philip J. Lahr
Richard T. Powell

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Robert Hawk
Martin Pomerantz

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1

GENERAL DESIGN OF CAREER FOLLOW-UP STUDY

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CHAPTER 1 SUMMARY

Objectives and Issues

1. Objectives. The primary objectives are to (1) describe the products of vocational education; i.e., the occupational, educational, and other experiences of vocational graduates; (2) describe the process of vocational education; i.e., relevant characteristics of schools offering vocational programs; and (3) establish the relationships between process and product variables. This volume is concerned with the first objective only.

2. Issues. Data will be organized in relation to three major issues: (1) general versus vocational education, (2) vocational versus comprehensive schools, and (3) small versus large enrollment schools. Each issue generates an independent variable in terms of which product variables are analyzed.

Selection of School and Graduates

3. Selection of schools. One hundred high schools offering three or more T&I courses were selected as a stratified random sample to represent the country as a whole. The sample was stratified by region, school enrollment, and type of school.

4. Selection of graduates. About 10,000 male graduates were randomly selected from the graduating classes of 1953, 1958, and 1962 for follow-up study. Consult the text for a detailed description of the sampling procedure and the sample.

The Survey Questionnaires

5. Survey questionnaires. A four-page follow-up questionnaire was developed for T&I vocational graduates, and also for academic-course graduates. Consult the text for exhibits.

The Survey Procedures

6. Questionnaire mailing schedule. A relatively massed seven-contact mailing schedule was adopted. Contacts included letters and postcards signed by school personnel. Consult the text for exhibits.

OBJECTIVES AND ISSUES

Introduction

After high school, then what? No less than 20 follow-up studies of vocational course graduates have sought to answer this question in the past fifteen years. For the most part, the studies have been well conceived, and the data provided has been useful. However, all are characterized by a major limitation. They are based upon samples which do not permit generalizations about vocational education in the United States as a whole. Most were limited to graduates from specific schools or school districts. Some can claim to be state-wide surveys. One, the North Atlantic Region Survey, covered graduates from a thirteen state area, including some of the most heavily industrialized states in the country.

The narrowness of the samples upon which previous follow-up studies have been based provided a major part of the motivation behind the present study. It is the first attempt at a nationwide survey of trade and industry (T & I) vocational course graduates based upon a representative sample of high schools offering three or more of such courses.

This report provides the results of that study. It describes the salient post-high school occupational and educational experiences of 5,500 graduates of high school level trade and industry vocational courses. It also compares their experiences with those of 1,800 academic course graduates who attended the same comprehensive high schools attended by half of the vocational course graduates.

Objectives

The basic objectives of the follow-up study herein reported were as follows:

1. To describe the essential dimensions of occupational, educational and other relevant experiences of a nationwide sample of T & I vocational course graduates from the classes of 1953, 1958, and 1962.

2. To compare vocational and academic course graduates from the same schools and graduating classes in terms of post-high school occupational, educational, and other relevant experiences.

In addition, the study provides data for three other objectives:

3. To determine the relationships between (1) school characteristics of curriculum, instructional methods, facilities, teacher personnel, student services and other relevant factors and (2) measures reflecting the post-high school occupational and educational experiences of vocational course graduates.

4. To determine the relationships between (1) the characteristics of vocational course graduates as revealed by school records and (2) measures reflecting post-high school occupational and educational achievement.

5. To determine the relationships between (1) measures of employment opportunity that characterize the region served by the school and (2) measures reflecting the post-high school occupational and educational achievement of vocational course graduates.

The present report is concerned with the first two objectives only. The findings relative to the other objectives will be discussed in a separate report.

Relevant Issues

When confronted with presenting research findings that have a bearing on important and controversial issues, the researcher has a choice. He can organize and present his findings so they are directly tied to the major issues. Or, he can pursue a more cautious route by presenting his findings in such a way that the reader is challenged to see the relationships between findings and issues. For the sake of stimulating both discussion and further research, this report takes the less cautious route. What were regarded as major issues in vocational education are met head-on in the data analyses.

There are strong temptations to the researcher who must write a report such as this to interject personal beliefs and opinions, particularly those that imply or call for remedial action to improve the quality of vocational education. Such temptations have been categorically rejected. The primary purpose of this report is to present the data and data-supported generalizations from the nationwide follow-up study of T & I graduates. It is essential that the findings be presented to the reader in as neutral and as objective a manner as possible. It is left to the reader to draw whatever implications for action there are in the data.

The data are analyzed and presented in terms of three major issues:

1. General vs. vocational education. We live in a world of rapidly changing technology. Occupations are born, grow to maturity, and become obsolescent within single generations, particularly at the semi-skilled level. If anything, the future promises even more rapid change. One reaction to this state of affairs has been a more vigorous insistence on advantages of a general as opposed to a vocational education. This viewpoint maintains that a general education provides a broad multi-directional base for whole families of occupations whereas vocational education ties individuals to occupational skills that are increasingly likely to become obsolescent.

   The opposing viewpoint maintains that what is needed is more, not less, vocational education at the high school and post-high school level. It is pointed out that the majority of those who complete a general education still do not go to college. And, of those that do, a substantial percentage do not complete their college education. The end result, it is claimed, is that hundreds of thousands graduate from high schools ill-equipped to face the problem of finding jobs. Vocational education would be more realistic.

   Again, the many specific pros and cons that stud the general versus vocational education issue are not here the concern.

The concern is with the implied but rarely stated question, "Does the type of high school education completed, i.e. general or vocational, make for significant differences in post-high school occupational or educational experiences, and in characteristics of the 'whole' individual?" The present study seeks to provide an answer in terms of major potential points of difference. It is unlikely that the issue will be resolved by the findings of this study. At the best, some long overdue data may move the issue off dead center.

2. Vocational vs. comprehensive type school. There is one viewpoint that maintains the "straight" vocational school is too narrow in its concept of high school education, that the direction of educational progress should be away from such schools toward the comprehensive high school in which presumably the student can obtain a broader academic base at the same time that he learns vocational skills. Many specific advantages are claimed for the comprehensive high school, e.g. more adequate preparation for post-high school education, superior instruction in non-vocational subjects, greater opportunity for extracurricular activities, and even less likelihood of discrimination in employment.

   The opposing viewpoint maintains that the "straight" vocational school has all the advantages of a single-minded dedication to vocational education, that vocational education does not take a back seat to the college preparatory program that comprises the major emphasis of the comprehensive high school. Again, many specific advantages are claimed, e.g. closer ties with community employers, higher standards of what constitutes adequate vocational education, counseling geared to vocational education rather than college preparatory programs, and avoidance of instilling a sense of inferiority in the vocational program student that occurs when he is one of a small minority in a comprehensive school.

   The merits of the specific advantages claimed and disadvantages denied are not here the concern. Behind the many viewpoints pro and con either type of school, there is the implied but never stated question, "Does the type of high school, i.e. comprehensive or vocational, make for significant differences in post-high school occupational and educational experiences, and in the characteristics of the 'whole' individual?" The present study examines some of the major potential points of difference for the purpose of injecting some broadly-based data into the issue. Undoubtedly, the issue will continue to be a lively one in the vocational education community.

3. Small vs. large enrollment schools. The size of educational institutions is increasingly a controversial issue. True, the issue is at the present more visibly focused on the college and university level, but the theme is played at all levels of the educational ladder. The small school viewpoint stresses what is lost when "bigness" takes over, e.g. loss of close contact between student and teacher, dwindling of teacher-inspired motivation, deterioration of the quality of instruction and administration that loses "contact" with the student as an individual.

   The large school viewpoint stresses the greater economies, the superior facilities, the wider choice of curriculum, the improved student services such as counseling and remedial education, and other advantages claimed for large enrollment schools.

   Again, the concern here is not with the many-time repeated claims for and against small and large enrollment schools. The concern is with the basic question underlying the issue, "Does high school enrollment size make for significant differences in post-high school occupational and educational experiences, and in the characteristics of the 'whole' individual?" The present study examines major potential points of difference in terms of the enrollment variable.

In addition to the independent variables implied by the three issues cited above, the study explores selectively the effect upon post-high school occupational and educational experience of such variables as race, region, post-graduation mobility, and year of graduation.

It should be pointed out that the primary objective of the study is not to provide data on controversial issues. The primary objective remains a factual description of the essential dimensions of occupational, educational and other relevant experiences of a nationwide sample of T & I vocational course graduates. The analyses of the data in terms of issue-related variables is a part of the descriptive task rather than a special endeavor to be provocative.

SCHOOL AND GRADUATE SELECTION

Selection of Schools

The vocational course graduates were selected from 50 comprehensive high schools and 50 vocational and/or technical high schools located in 38 states. The schools were selected as follows: The population of comprehensive and vocational high schools in the United States that offered three or more T & I vocational courses was identified by means of the U. S. Office of Education 1961-62 directory, Preparatory Trade and Industrial Training Programs in Public Schools. The directory was updated by asking state directors of vocational education to provide more recent information about high school vocational course offerings in their states. The survey indicated that there were 667 public high schools in the United States offering three or more high school level T & I vocational courses. The number and percent of such schools in each of eight geographical regions is shown in Table 1.

From the population of 667 schools offering three or more T & I vocational courses, a stratified random sample of 100 schools was selected. The strata were geographical regions, total school enrollment, and type of school, i.e., comprehensive, vocational, technical, and vocational-technical.

Table 1 shows the regional distribution of both the population and the 100 school sample. Each region is represented in the sample in approximate proportion to its contribution to the United States total.

Table 1. DISTRIBUTION OF THE STUDY'S POPULATION AND SAMPLE OF SCHOOLS BY GEOGRAPHICAL REGION. (U. S. Office of Education Regions)

Geographical Regions	Population		Sample	
	Number	Percent	Number	Percent
1. New England	72	10.8	11	11
2. Mideast	162	24.3	24	24
3. Great Lakes	100	15.0	15	15
4. Plains	48	7.2	7	7
5. Southeast	196	29.4	29	29
6. Southwest	54	8.1	8	8
7. Rocky Mountain	8	.2	1	1
8. Far West & Pacific	27	4.5	5	5
UNITED STATES	667	99.5	100	100

Table 2 shows the distribution of population and sample schools in the three total enrollment categories. Again, each enrollment category is represented in the sample in approximate proportion to its representation in the population.

Table 2. DISTRIBUTION OF THE POPULATION AND SAMPLE SCHOOLS BY TOTAL ENROLLMENT

Enrollment	Population		Sample	
	Number	Percent	Number	Percent
1-499	177	26.5	30	30
500-1499	284	42.5	40	40
1500 and above	206	30.9	30	30
UNITED STATES	667	99.9	100	100

Table 3 shows the distribution of population and sample schools in type of school categories. Each type of school is represented in the sample in approximate proportion to its representation in the population. Half of the sample consisted of comprehensive schools; the other half consisted of vocational schools, all types.

Table 3. DISTRIBUTION OF THE POPULATION AND SAMPLE SCHOOLS BY TYPE OF SCHOOL

Type of School	Population		Sample	
	Number	Percent	Number	Percent
Vocational	162	24.3	27	27
Technical	55	8.2	9	9
Vocational-technical	79	11.8	14	14
Comprehensive	371	55.6	50	50
UNITED STATES	667	99.9	100	100

The schools were randomly selected within each stratification category.[1] Figure 1 shows the geographical distribution of the schools. The titles and city locations of the schools are listed in the Appendix.

The 100 schools were visited in the Spring and Fall of 1964 by two-man data-collecting teams. During these visits, graduates from the classes of 1953, 1958, and 1962 were selected for follow-up study.

Selection of Graduates

Two restrictions were applied to the selection of graduates. The first restriction was to select only male graduates. This was done because males, unlike females, were more likely to be either gainfully employed or seeking such employment as long as ten years after graduation from high school. The decision was in no way regarded as a reflection on the worthwhileness of a follow-up study of female graduates.

The second restriction was to limit the follow-up study and report to graduates of T & I vocational courses. It was recognized that the primary criterion for the selection of the schools, i.e., a curriculum of three or more T & I vocational courses, would result in a non-representative sample of schools from the standpoint of other types of vocational programs such as agriculture, distributive education and commercial programs. Graduates of the latter type of programs were selected for exploratory purposes only, as a preliminary to possible future study based upon a representative sampling.

Table 4 shows the maximum number of graduates that were to be selected from each school, assuming the school offered such programs. It was not expected that each school would generate the maximums indicated in the table.

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[1] The principle of randomness was violated in the case of six schools which were replacements for schools initially selected. Factors beyond the control of investigators influenced the selection of these schools.

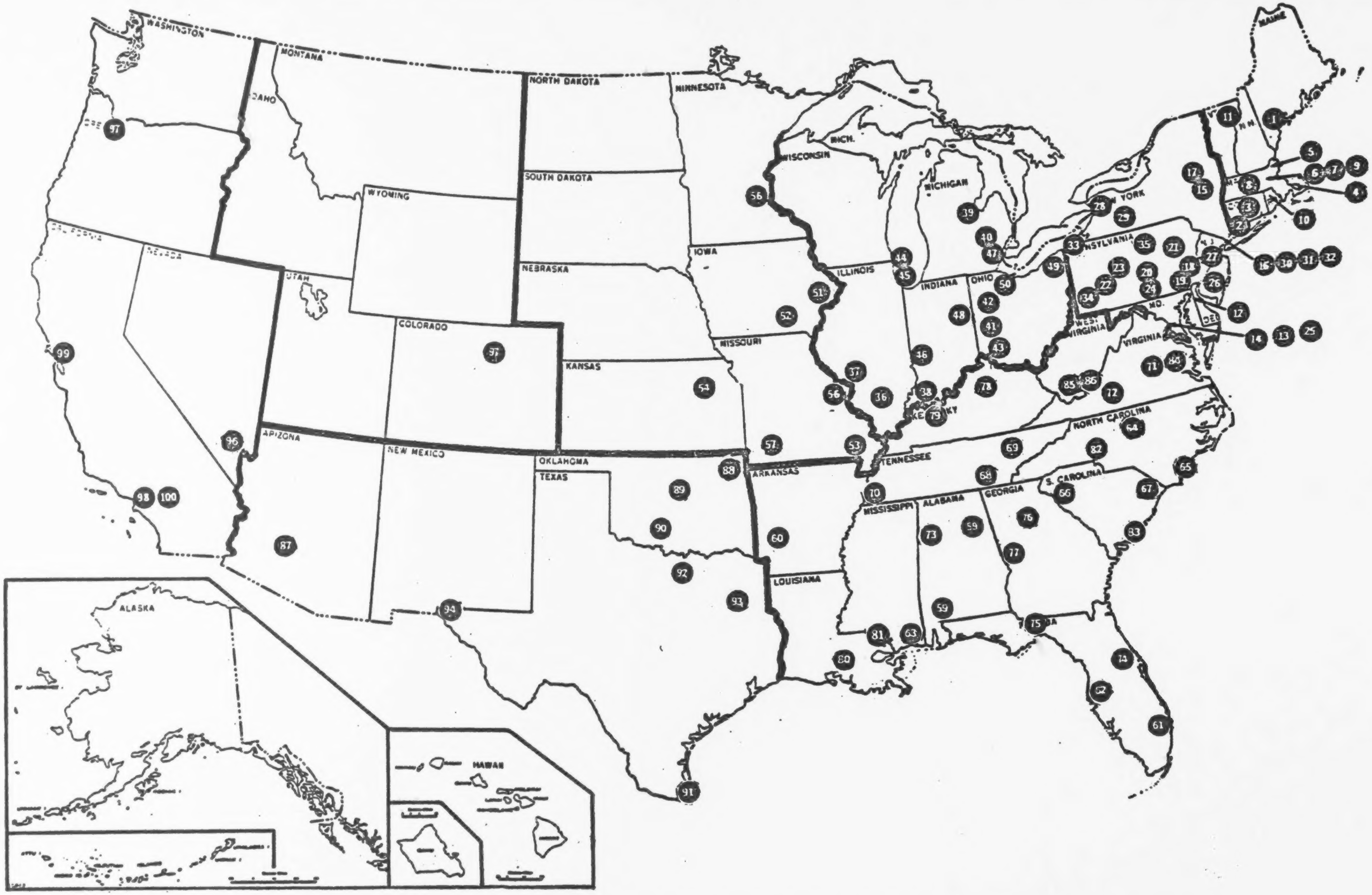
WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
IDAHO
SOUTH DAKOTA
WYOMING
WISCONSIN
MICH.
MICHIGAN
NEW YORK
MAINE
N.H.
CALIFORNIA
NEVADA
UTAH
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
N.J.
COLORADO
KANSAS
MISSOURI
WEST VIRGINIA
MD.
DEL.
VIRGINIA
KENTUCKY
ARIZONA
NEW MEXICO
OKLAHOMA
TEXAS
ARKANSAS
TENNESSEE
NORTH CAROLINA
S. CAROLINA
MISSISSIPPI
ALABAMA
GEORGIA
LOUISIANA
FLORIDA
ALASKA
HAWAII

Figure 1. GEOGRAPHICAL DISTRIBUTION OF HIGH SCHOOLS. The number of schools selected from each region was proportional to the region's contribution of qualified schools to the United States total of such schools. (See text for details.)

Table 4. MAXIMUM NUMBERS OF GRADUATES SELECTED FROM EACH AVAILABLE PROGRAM AT EACH COMPREHENSIVE AND VOCATIONAL SCHOOL

Type of Program	Graduating Classes		
	1953	1958	1962
Trade and industry	50	50	50
Diversified cooperative	25	25	25
Distributive education	25	25	25
Vocational agriculture	25	25	25
Commercial/business	25	25	25
Academic (non-vocational)	25	25	25
SCHOOL MAXIMUM	175	175	175

The procedure for the selection of graduates was as follows:

1. The schools were contacted and asked to have alphabetized rosters of graduates ready for the visiting A•I•R team. A special roster form was provided to insure that graduates would be alphabetized by type of course and class year. A specimen form is shown in the Appendix section.

2. At the school, A•I•R personnel made the selection of names from the rosters of graduates. If the number of graduates for each available program was less than the maximums indicated in Table 4. all graduates were selected. If the number of graduates was more than the maximums to be selected, the procedure was to select every Nth graduate so as to get the desired number.

   The procedure varied slightly for T & I courses. The maximum was obtained by taking approximately an equal number of graduates from each T & I course offered. In practice, it was not always possible to draw an equal number of graduates from each T & I course because of wide variation in the number of graduates from each course.

3. Once the names were selected, home addresses from school records were recorded on the roster forms. School personnel were asked to provide a more recent address if they knew of one. Addresses of parents, relatives or employers were accepted where the original school record address was in doubt or known to be incorrect. Graduates known to be deceased or institutionalized were replaced with other names.

   The schools varied widely in their ability to provide updated addresses. Very few made an effort to maintain contact with graduates. It was more often the case that an individual instructor made such an effort on his own initiative.

4. A final screening of graduate names took place after the schools were visited. Incomplete addresses were removed. A small number of female graduates that escaped prior attention were also removed. Telephone directories were checked for more recent addresses for 1953 graduates when the school was unable to provide a more recent address.

Description of Sample Selected

A distinction is made between the sample of graduates initially selected for follow-up study and the actual sample as determined by questionnaire returns. The latter sample is described in Chapter 2. The initial sample selected is described in this section in terms of T & I graduates only.

Table 5 shows the distribution of T & I graduates by type of school and class year. The number of graduates selected from vocational schools was greater than comprehensive school graduates because of the smaller graduating classes among the latter schools.

Table 5. DISTRIBUTION OF T & I GRADUATES SELECTED FOR FOLLOW-UP STUDY BY CLASS YEAR AND TYPE OF SCHOOL

Type of School	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Vocational	1779	60.4	2002	54.7	2379	56.7	6160	57.0
Comprehensive	1166	39.6	1659	45.3	1820	43.3	4645	43.0

Table 6 shows the distribution of T & I graduates by school enrollment category and class year. The percentages of all graduates by enrollment category is a reflection of the 30-40-30 distribution of schools by enrollment category.

Table 6. DISTRIBUTION OF T & I GRADUATES SELECTED FOR FOLLOW-UP STUDY BY CLASS YEAR AND SCHOOL ENROLLMENT *

School Enrollment	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Less than 500	1021	34.7	1146	31.3	1370	32.6	3537	32.7
500 - 1500	1119	38.0	1432	39.1	1553	37.0	4104	38.0
More than 1500	805	27.3	1083	29.6	1276	30.4	3164	29.3

* As of October, 1963.

Table 7 shows the distribution of T & I graduates by geographic region and class year. The percentages of all graduates for the geographic regions corresponds remarkably with the percentage distribution of schools by geographic region. The Southeast, for example, contributed 29 percent of the total school sample and 27.5 percent of the total T & I graduate sample selected for follow-up. The correspondence was entirely the product of applying the selection principles described in the previous section.

Table 7. DISTRIBUTION OF T & I GRADUATES SELECTED FOR FOLLOW-UP STUDY BY CLASS YEAR AND GEOGRAPHIC REGION

Geographic Region	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Northeast	345	11.7	426	11.6	500	11.9	1271	11.8
Mideast	809	27.5	971	26.5	1042	24.8	2822	26.1
Great Lakes	384	13.0	556	15.2	683	16.3	1623	15.0
Plains	301	10.2	283	7.7	371	8.8	955	8.8
Southeast	803	27.3	1038	28.4	1133	27.0	2974	27.5
Southwest	128	4.3	215	5.9	255	6.1	598	5.5
Rocky Mountains . . .	21	0.7	31	0.8	36	0.8	88	0.8
Pacific	154	5.2	141	3.8	179	4.3	474	4.4

Table 8 shows the distribution of T & I graduates by trade and class year. In rank order, the five most frequently drawn upon trades were automobile mechanics (15.2%), machinist (14.9%), electrician (10.9%), drafting (7.1%), and printing (7.0%). The percentages reflect indirectly the relative frequency with which courses were offered in the one hundred school sample.

Table 8. DISTRIBUTION OF T & I GRADUATES SELECTED FOR FOLLOW-UP STUDY BY CLASS YEAR AND TRADE *

Trade and Industry Trades	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Automotive mechanics	412	14.0	565	15.4	668	15.9	1645	15.2
Auto body repair	42	1.4	58	1.6	84	2.0	184	1.7
Airplane power mechanics	37	1.2	49	1.3	40	1.0	126	1.2
Air conditioning and heating . . .	0	0.0	10	0.3	23	0.5	33	0.3
Building trades (mixed)	62	2.1	102	2.8	104	2.5	268	2.5
Carpentry	144	4.9	167	4.6	146	3.5	457	4.2
Commercial art	51	1.7	67	1.8	78	1.8	196	1.8
Drafting (all types)	209	7.1	305	8.3	256	6.1	770	7.1
Electrician	337	11.4	403	11.0	436	10.4	1176	10.9
Electronic technician	42	1.4	94	2.6	171	4.1	307	2.8
Food trades	11	0.4	37	1.0	52	1.2	100	0.9
Foundry	11	0.4	12	0.3	15	0.3	38	0.4
Machinist	462	15.7	569	5.5	580	13.8	1611	14.9
Masonry	26	0.9	88	2.4	69	1.6	183	1.7
Mill and cabinetry	213	7.2	197	5.4	191	4.5	601	5.6
Metal trades	66	2.2	39	1.1	57	1.4	162	1.5
Painting and decorating	9	0.3	13	0.4	14	0.3	36	0.3
Plumbing	43	1.5	37	1.0	38	0.9	118	1.1
Printing	213	7.2	235	6.4	305	7.3	753	7.0
Radio and TV repair	94	3.2	92	2.5	126	3.0	312	2.9
Sheet metal fabrication	77	2.6	105	2.9	109	2.6	291	2.7
Shoe repair	8	0.3	24	0.6	17	0.4	49	0.4
Tailoring	11	0.4	33	0.9	39	0.9	83	0.8
Upholstery	13	0.4	15	0.4	16	0.4	44	0.4
Welding	147	5.0	123	3.4	190	4.5	460	4.2
Other than above	205	7.0	222	6.1	375	8.9	802	7.4

* Actual course titles do not in all cases correspond with the trade titles listed above. Efforts were made to give each vocational course an equal representation within a school.

Table 9 shows the distribution of T & I graduates by school and class year. Two points may be observed: (1) The number of graduates selected for follow-up in some schools was considerably less than the maximum to be selected. This was because of relatively small numbers of graduates. (2) A few schools were over-represented, i.e. the number of names of graduates exceeded the maximum of 50 for a given class year. Some of the school visitation teams enthusiastically took all graduate names even when the number exceeded the desired maximum of fifty.

Table 9. NUMBER OF T & I GRADUATES SELECTED FROM EACH SCHOOL FOR THE CLASSES OF 1953, 1958, and 1962, WITH REGIONAL SUBTOTALS. (C = Comprehensive, V = Vocational)

School	Class Years		
	1953	1958	1962
C 1	17	16	18
V 2	43	50	50
V 3	20	44	52
V 4	50	53	61
V 5	47	48	46
V 6	36	40	48
V 7	46	53	50
V 8	16	24	18
V 9	17	27	69
V 10	33	48	61
V 11	20	23	27
NORTHEAST	345	426	500
C 12	13	18	27
C 13	37	49	53
C 14	0	40	26
C 15	5	11	28
C 16	56	40	52
C 17	27	39	41
C 18	24	34	37
C 19	42	28	26
C 20	0	38	40
C 21	30	33	34
C 22	31	38	54
C 23	29	27	28
C 24	71	71	73
V 25	19	40	43
V 26	51	40	45
V 27	37	57	58
V 28	48	52	51
V 29	46	48	48
V 30	61	65	53
V 31	30	55	70
C 32	38	22	28
V 33	39	50	53
V 34	41	39	40
V 35	34	37	34
MIDEAST	809	971	1042
C 36	40	43	36
C 37	15	24	28
C 38	0	49	63
C 39	16	11	21
C 40	20	37	44
V 41	21	41	39
C 42	0	36	45
C 43	20	37	35
V 44	35	47	53
V 45	41	54	55
C 46	34	35	36
V 47	44	49	30
C 48	43	26	30
V 49	5	15	123
V 50	50	52	45
GREAT LAKES	384	556	683
C 51	7	33	49
V 52	50	50	49
C 53	32	31	28
V 54	46	47	99
V 55	45	43	43
V 56	56	55	56
V 57	65	24	47
PLAINS	301	283	371
C 58	16	14	9
C 59	21	68	47
C 60	19	19	17
C 61	7	44	42
C 62	3	19	59
C 63	12	36	35
C 64	7	27	22
C 65	23	15	22
C 66	30	44	45
C 67	18	37	19
C 68	27	52	53
C 69	37	40	43
V 70	25	26	35
C 71	18	45	30
C 72	42	44	63
V 73	39	66	66
V 74	16	28	22
V 75	5	7	12
V 76	1	25	37
V 77	49	42	59
V 78	107	90	94
V 79	27	31	41
V 80	30	45	41
V 81	115	41	52
V 82	6	10	28
V 83	20	33	36
V 84	44	25	31
V 85	11	21	36
V 86	28	44	37
SOUTHEAST	803	1038	1133
C 87	27	19	28
C 88	7	14	14
C 89	17	51	50
C 90	21	58	40
C 91	1	17	13
C 92	14	18	14
C 93	35	24	29
V 94	6	14	67
SOUTHWEST	128	215	255
C 95	21	31	36
ROCKY MTS.	21	31	36
C 96	37	18	32
V 97	41	42	47
C 98	48	11	19
V 99	17	42	22
C100	11	28	59
PACIFIC	154	141	179

THE SURVEY QUESTIONNAIRES

Questionnaire Development

Two questionnaires were developed, one for vocational course graduates and the other for academic course graduates.

The initial drafts of the questionnaires were developed by the project staff, and submitted for initial review and comments to a number of vocational education specialists. Suggestions for revision were considered, and when deemed an improvement, incorporated into a first revision.

The first revision was tested in two ways: (1) A number of local high school graduates were asked to complete the questionnaire. They were then interviewed on the contents of the questionnaire to check their understanding of the items. A record was kept of items that appeared to be subject to misunderstanding. (2) A number of vocational educators were asked to review the first revision. The questionnaires then underwent additional revision for the purposes of two pilot studies designed to establish the survey procedures. The pilot studies are described below.

Pilot Study No. 1

The purpose of this pilot study was to determine (1) whether the length of the questionnaire would seriously influence the rate of return, (2) whether an incentive inducement to return the questionnaire would substantially increase the rate of return, and (3) whether the rate of return would be differentially effected by number of years since graduation, thereby calling for different approaches to the three graduating classes.

The 1953, 1958, and 1962 vocational course graduates of a nearby comprehensive and a vocational school were selected for the study. A total of 240 graduates were assigned equally to four experimental conditions:
(1) long questionnaire, material incentive, (2) short questionnaire, material incentive, (3) long questionnaire, no material incentive, and (4) short

questionnaire, no material incentive. The different trades and graduating classes were equated among the experimental conditions. A maximum of seven mail contacts was made to non-respondents.

The results indicated (1) no significant difference in percentage of return between incentive and non-incentive groups, (2) no significant difference in percentage of return between long and short questionnaire group, and (3) significant differences in percentage of return, of those contacted, between the classes of 1953, 1958, and 1962.[1]

The conclusions were to (1) offer no material incentives to graduates to return questionnaires, (2) be guided by judgment in adopting a short questionnaire form, and (3) use the same approach to the three classes of graduates, because of uncertainty about differential treatments.

Pilot Study No. 2

The purpose of the second pilot study was to determine (1) whether more complete knowledge of the study by the graduates contacted would influence the percentage of questionnaires returned, (2) whether the spacing of successive mail contacts would influence returns, and (3) whether a standard letterhead would be as effective as an actual school letterhead.

The 1953, 1958, and 1962 graduates of two vocational schools located in the same state were selected for the study. A total of 276 graduates were assigned randomly and in equal numbers to one of four experimental conditions: (1) massed contacts, standard letterhead, (2) spaced contacts, standard letterhead, (3) massed contacts, actual school letterhead, and (4) spaced contacts, actual school letterhead. The different trades and graduating classes were equated among the experimental conditions. A maximum of seven mail contacts was made to non-respondents.

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[1] Based upon graduates successfully contacted by mail, the percentages of returns for 1953, 1958, and 1962 graduates were 66, 72, and 77 percent respectively, indicating greater cooperation from recent graduates.

On the basis of an overall 69 percent return, (84 percent of those who could be located), the results indicated (1) a closely massed mailing schedule for successive contacts was more effective than a widely spaced schedule and (2) a distinctively designed standard letterhead, indicating Ford Foundation sponsorship and A·I·R direction of the study, was slightly more effective in percentage of questionnaire returns than the actual school letterhead.

The conclusions reached on the basis of these results were to (1) employ a closely spaced schedule of successive contacts with non-respondents in the main follow-up effort, and (2) use the standardized letterhead for the initial contact.

Final Version of Questionnaires

The questionnaire returns from the two pilot studies were analyzed for items likely to generate missing, questionable, or unusable data. Only minor changes were made to the questionnaires as a result of the last pilot study experience.

The final version of the vocational graduate questionnaire is shown on pages 22 through 25. The final version of the academic graduate questionnaire is shown on pages 26 through 29.

A comment is appropriate on the physical layout of the questionnaire. Normally, ease of data processing is a major concern in questionnaire design. The questionnaires would have been several pages longer, however, if designed with that purpose in mind. It was felt that a short, four-page, compact design would give a greater percentage of returns than a longer questionnaire designed to facilitate coding of the questionnaire data. Therefore, the decision was made in favor of a shorter questionnaire.

It would be comfortable to report that data coding was no problem with the questionnaires adopted. Unhappily, that was not the case. The short version of the questionnaires proved to be costly in both time and money for data processing. Solace was derived from the fact that the percentage of returns achieved was far greater than predicted by school personnel in sample schools that had attempted follow-up studies of their own.

VOCATIONAL EDUCATION IN UNITED STATES

An AMERICAN INSTITUTE FOR RESEARCH Survey

INSTRUCTIONS

Most items on this questionnaire require only a check mark (√) to give your answer. Please answer all items ACCURATELY. The information will be STRICTLY CONFIDENTIAL.

Please return the questionnaire in the postage-paid, pre-addressed envelope provided.

THANKS FOR YOUR HELP ON THIS IMPORTANT STUDY

1. Your Name ______________________ **2. Your High School's Name** ______________________

3. Year Graduated from High School: Mo ______ **Yr** ______ **4. High School Course Studied** ______________________

5. Below are ways students are influenced to select a vocational course. Mark those that influenced you to choose the course you took in high school. CIRCLE THE NUMBER OF THE MOST IMPORTANT INFLUENCE

- ☐ 1. Books and magazines
- ☐ 2. Parents
- ☐ 3. Brother or sister
- ☐ 4. Relative
- ☐ 5. Neighbor (adult)
- ☐ 6. Friend your age
- ☐ 7. Job opportunities
- ☐ 8. Part-time job
- ☐ 9. School teacher
- ☐ 10. School counselor
- ☐ 11. School principal
- ☐ 12. Course graduate
- ☐ 13. Other, specify below.

____

____

____

6. Did your school offer the vocational course you really wanted to take?

☐ 1. Yes → If Yes, did you get to take it? → ☐ 6-1.1 Yes, I took the course I wanted.

☐ 6-1.2 No, I could not take the course I wanted → because ______________________

____

☐ 2. No → If No, what course did you want to take that was not offered?

____

7. How long after leaving high school did it take you to get your first full-time job? ____________ **months**

8. How did you get your first full-time job after leaving high school? (Mark all that apply.)

- ☐ 1. By answering a want-ad
- ☐ 2. Private employment agency
- ☐ 3. State employment agency
- ☐ 4. Help of school teacher
- ☐ 5. Help of school counselor
- ☐ 6. Help of school principal
- ☐ 7. Help of school placement service
- ☐ 8. Help of friend or relative
- ☐ 9. Through school coop program
- ☐ 10. Other than above

If you never had a full-time job, mark here – ☐
SKIP TO ITEM 12

9. Was your first full-time job in the trade or field for which you were trained in high school?

If Yes: Indicate how well your vocational course prepared you for your first full-time job.

- ☐ 1. Exceptionally well-prepared; training covered all essentials required by first job
- ☐ 2. Well-prepared on the whole; but there were some important gaps in training
- ☐ 3. Poorly prepared; much that I needed to know was not covered in vocational course

If No: Mark reason below.

- ☐ 1. No job available in area of training
- ☐ 2. Learned new job by continuing school
- ☐ 3. Learned new job in military service
- ☐ 4. Decided I liked other work better
- ☐ 5. Not accepted as apprentice in trade
- ☐ 6. Other (specify) ______________________

10. How did the: (1) tools and equipment, (2) work methods, and (3) work materials used on your first full-time job compare with those used in your vocational shop courses? If a sub-item is not applicable, mark the box NA to the right. Otherwise, mark your answer.

TOOLS & EQUIPMENT ☐ NA	WORK METHODS ☐ NA	WORK MATERIALS ☐ NA
☐ 1. Identical or almost so	☐ 1. Identical or almost so	☐ 1. Identical or almost so
☐ 2. Little real difference	☐ 2. Little real difference	☐ 2. Little real difference
☐ 3. Very much different	☐ 3. Very much different	☐ 3. Very much different

If you marked 3 above (Very much different), did it take long to learn what was new?

☐ 1. Only about a few weeks	☐ 1. Only about a few weeks	☐ 1. Only about a few weeks
☐ 2. Less than three months	☐ 2. Less than three months	☐ 2. Less than three months
☐ 3. About three-six months	☐ 3. About three-six months	☐ 3. About three-six months
☐ 4. About six months-a year	☐ 4. About six months-a year	☐ 4. About six months-a year
☐ 5. More than a year	☐ 5. More than a year	☐ 5. More than a year

11.

For each of the skill areas listed below, answer the four questions at the right. → Indicate your answers by marking appropriate boxes.	1 How important is this skill for your present job?				2 How much of this skill was learned in high school?				3 Where did you learn the most about this skill?					4 Do you feel the need for more instruction or training in this area? (Mark either Yes or No)
	1 Of No Real Importance	2 Slightly Important	3 Considerably Important	4 Of Critical Importance	1 Almost Nothing	2 Some, But Not Much	3 Large Amount	4 Almost All	1 High School Coop Program	2 High School Shop or Class	3 Apprentice Program	4 On Regular Job	5 Elsewhere	
1 MANUAL JOB SKILLS. Refers to skill at using or operating tools, equipment, materials, machines, etc., in your work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
2 JOB PRACTICAL KNOWLEDGE. Refers to practical everyday knowledge of work processes, methods, procedures, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
3 JOB THEORETICAL KNOWLEDGE. Refers to knowledge of basic principles and concepts underlying the practical trade work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
4 MATHEMATICAL SKILLS. Refers to ability to use arithmetic or higher mathematics to solve work problems.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
5 COMMUNICATION SKILLS. Refers to skill at speaking, writing, drafting, sketching, etc., to communicate ideas.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
6 READING AND INTERPRETIVE SKILLS. Refers to skill at reading printed matter, blueprints, tables, diagrams, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
7 CLERICAL SKILLS. Refers to skill at keeping records, making out reports, and other types of routine paper work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
8 PERSONAL RELATIONS SKILLS. Refers to skill at dealing with people, such as customers, co-workers, other trades, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
9 SUPERVISORY SKILLS. Refers to skill at supervising others, e.g., instructing, directing, evaluating, planning, organizing, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
10 OTHER SKILLS. Add what you feel applies to your job and is not covered by the above. ____________________	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No

12. Please give your frank opinion about the following items concerning your high school education. (Mark one answer for each item.)

	ON THE WHOLE:			
	1. Poor	2. Satisfactory	3. Good	4. Excellent
1. Quality of instruction from shop instructors	☐	☐	☐	☐
2. Quality of instruction from academic teachers	☐	☐	☐	☐
3. Condition of shop facilities and equipment	☐	☐	☐	☐
4. General physical condition of school	☐	☐	☐	☐
5. Vocational counseling given to students	☐	☐	☐	☐
6. Help given students to find jobs	☐	☐	☐	☐
7. Opportunity for extra-curricular activities	☐	☐	☐	☐
8. Interest shown by teachers in student problems	☐	☐	☐	☐
9. Reputation of the school in community	☐	☐	☐	☐
10. Strictness of school in maintaining discipline	☐	☐	☐	☐

13. Please mark all kinds of education obtained since leaving high school, and provide the information requested about each. Put an asterisk (*) behind those you are presently attending. If you have not had any additional education since high school, mark here → ☐
Estimate your average hours per week over the total period attended.

Mark Here	Type of Education	Major Subject or Course(s)	Dates Attended (Give Month & Year)	Leave Blank	Avg. Hrs. Per Wk. in School	Leave Blank
☐ 0	Two-year or junior college		Fr: To:			
☐ 1	Four-year college/university		Fr: To:			
☐ 2	Post-college graduate school		Fr: To:			
☐ 3	Private trade/technical school		Fr: To:			
☐ 4	Public trade/technical school		Fr: To:			
☐ 5	Business-commercial school		Fr: To:			
☐ 6	Adult continuation school		Fr: To:			
☐ 7	Military specialist school		Fr: To:			
☐ 8	Company course or school		Fr: To:			
☐ 9	Correspondence courses		Fr: To:			
☐ 10	Other (specify)		Fr: To:			

14. JOB HISTORY SINCE HIGH SCHOOL. Start with your **FIRST** job after leaving high school. List **ALL** full-time jobs. List **ONLY** part-time jobs held six months or more, except if your present job is a part-time job. List the jobs in the order that you held them, up to and including your **PRESENT JOB**. (If self-employed, give **NET EARNINGS**, not **GROSS INCOME** of your business.)

	1	2	3	4	5	6	7	8	9	10
EXAMPLE	Starting Date Mo. 7 Yr. 53 Leaving Date Mo. 10 Yr. 54	What type of work did you do? MACHINIST APPRENTICE	Did job require move to new city? 1. ☐ No 2. ☒ Yes How many miles? 20	Full Time 1. ☐ Yes 2. ☒ No If part-time, how many hours per week, on average? 15	Self Employed 1. ☐ Yes 2. ☒ No	Was the work related to vocational course you took? 1. ☒ Same trade studied. 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☒ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $ 1.25 per HR Earnings at Leaving Give $ per hr., wk., or mo. $ 1.50 per HR	Reason For Leaving Job NO WORK	Were you unemployed after leaving job? 1. ☒ Yes 2. ☐ No If Yes, how long? 5 MONTHS
1st JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
2nd JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very Dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
3rd JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
4th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
5th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly related 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
6th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average	Self Employed 1. ☐ Yes 2. ☐ No	Was the work related to vocational course you took? 1. ☐ Same trade studied 2. ☐ Highly related 3. ☐ Slightly unrelated 4. ☐ Completely unrelated	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per_____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per_____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?

ATTENTION: If you held more than six full and part-time jobs, please continue on the page enclosed. Be sure to include your present full-time and/or part-time job. Thank you.

15. YOUR PRESENT JOB. (Please give this additional information.)

1. Present Earnings? Give $ per hour, week, or month. $__________ per __________
2. Your Employer: ____________________

Street Address: ____________________

City-State: ____________________

16. Did you have any military service? ☐ 1. No ☐ 2. Yes ——→ How many months? __________ Nature of work? __________

17. Were you unemployed for reason of health or hospitalization? ☐ 1. No ☐ 2. Yes ——→ How many months? __________

> Part of our study concerns the interests, activities, and associations of high school graduates. We hope you will not regard this information too personal to give us. All is confidential. Please weigh your answers carefully.

18. How frequently do you talk about the following topics when you get together socially with others?

	ALMOST NEVER 1	INFREQUENTLY 2	FREQUENTLY 3	ALMOST ALWAYS 4
1. Your work	☐	☐	☐	☐
2. Religion	☐	☐	☐	☐
3. Politics	☐	☐	☐	☐
4. Business conditions	☐	☐	☐	☐
5. World affairs	☐	☐	☐	☐
6. National affairs	☐	☐	☐	☐
7. State affairs	☐	☐	☐	☐
8. Community problems	☐	☐	☐	☐
9. Your hobbies	☐	☐	☐	☐
10. Sports and athletics	☐	☐	☐	☐
11. Music, art, literature, etc.	☐	☐	☐	☐
12. Government matters	☐	☐	☐	☐
13. Labor union matters	☐	☐	☐	☐
14. Your family	☐	☐	☐	☐
15. Other (specify) __________	☐	☐	☐	☐

19. How frequently do you engage in the following types of leisure-time activities?

	ALMOST NEVER 1	INFREQUENTLY 2	FREQUENTLY 3	ALMOST DAILY 4
1. Reading newspapers	☐	☐	☐	☐
2. Engaging in craft hobbies (model building, jewelry making, etc.)	☐	☐	☐	☐
3. Reading professional or trade books and periodicals	☐	☐	☐	☐
4. Attending athletic events as a spectator	☐	☐	☐	☐
5. Attending plays, concerts, ballets, etc.	☐	☐	☐	☐
6. Watching television programs	☐	☐	☐	☐
7. Gardening (raising flowers, fruit trees, vegetables, etc.)	☐	☐	☐	☐
8. Reading general magazines (LIFE, LOOK, READERS' DIGEST, etc.)	☐	☐	☐	☐
9. Working at home shop activities (woodworking, metalworking, etc.)	☐	☐	☐	☐
10. Attending educational courses for self-improvement	☐	☐	☐	☐
11. Engaging in team sports (softball, football, etc.)	☐	☐	☐	☐
12. Engaging in performing arts (acting, singing, instruments, etc.)	☐	☐	☐	☐
13. Visiting or entertaining friends	☐	☐	☐	☐
14. Reading non-fiction books (biography, history, travel, etc.)	☐	☐	☐	☐
15. Collecting stamps, coins, rocks, or other items	☐	☐	☐	☐
16. Attending educational lectures and discussion groups	☐	☐	☐	☐
17. Engaging in individual sports (swimming, hunting, fishing, etc.)	☐	☐	☐	☐
18. Listening to music at home for pleasure	☐	☐	☐	☐
19. Going to the movies	☐	☐	☐	☐
20. Other (please write in) __________	☐	☐	☐	☐

20. Below is a list of different type organizations and associations. Mark the space which best describes your membership status in each type of organization, association, or club.

	NOT A MEMBER 1	INACTIVE MEMBER 2	ACTIVE MEMBER 3	PRESENTLY AN OFFICER 4
1. A church or a religious organization	☐	☐	☐	☐
2. Political organization	☐	☐	☐	☐
3. Service organization (Rotary, Lions, Kiwanis, etc.)	☐	☐	☐	☐
4. Sports club or athletic organization	☐	☐	☐	☐
5. Labor union	☐	☐	☐	☐
6. Fraternal organization (Elks, Masons, K. of C., etc.)	☐	☐	☐	☐
7. Veterans' organization	☐	☐	☐	☐
8. Business or trade association	☐	☐	☐	☐
9. Music or other cultural association	☐	☐	☐	☐
10. Local civic association	☐	☐	☐	☐
11. Youth organization (Scouts, Y.M.C.A., etc.)	☐	☐	☐	☐
12. Professional association	☐	☐	☐	☐
13. Other (specify) __________	☐	☐	☐	☐

21. Marital Status

☐ 1. Single
☐ 2. Married
☐ 3. Other

22. Race

☐ 1. White
☐ 2. Negro
☐ 3. Other

23. Religion

☐ 1. Protestant
☐ 2. Catholic
☐ 3. Jewish
☐ 4. Other
☐ 5. None

24. Do you have any disability or health condition that limits your employability?

☐ 1. Yes ☐ 2. No

THANK YOU FOR YOUR TIME AND EFFORT

VOCATIONAL EDUCATION IN UNITED STATES

An AMERICAN INSTITUTE FOR RESEARCH Survey

Ⓖ

INSTRUCTIONS

Most items on this questionnaire require only a check mark (√) to give your answer. Please answer all items ACCURATELY. The information will be STRICTLY CONFIDENTIAL.

Please return the questionnaire in the postage-paid, pre-addressed envelope provided.

THANKS FOR YOUR HELP ON THIS IMPORTANT STUDY

1. Your Name ______________________ **2. Your High School's Name** ______________________

Your Address ______________________ **City** ______________ **State** __________

3. Year Graduated from High School: Mo ________ **Yr** ________ **4. High School Course Studied** ______________________

5. Below are ways students are influenced to select a high school course. Mark those that influenced you to choose the course you took in high school. CIRCLE THE NUMBER OF THE MOST IMPORTANT INFLUENCE.

- ☐ 1. Books and magazines
- ☐ 2. Parents
- ☐ 3. Brother or sister
- ☐ 4. Relative
- ☐ 5. Neighbor (adult)
- ☐ 6. Friend your age
- ☐ 7. Job opportunities
- ☐ 8. Part-time job
- ☐ 9. School teacher
- ☐ 10. School counselor
- ☐ 11. School principal
- ☐ 12. Course graduate
- ☐ 13. Other, specify below.

____

____

____

6. Did your school offer the course of studies you really wanted to take?

☐ 1. Yes → If Yes, did you get to take it? → ☐ 6-1.1 Yes, I took the course I wanted.
☐ 6-1.2 No, I could not take the course I wanted → because ______________________
____

☐ 2. No → If No, what course did you want to take that was not offered?
____

7. What did you do after high school graduation?

- ☐ 1. Looked for a full-time job
- ☐ 2. Looked for a part-time job
- ☐ 3. Went to a college or university
- ☐ 4. Went to a public vocational-technical school
- ☐ 5. Went to a private trade-technical school
- ☐ 6. Went into military service
- ☐ 7. Other (please specify) ______________________

8. If you looked for a full-time job after graduating, did you find one?

☐ 1. Yes
☐ 2. No

→ If Yes, how many months did it take you to find the job?
________ months

→ If Yes, what type of job was it? ______________________
____
____
____
____

→ If Yes, how did you get the job?

- ☐ 1. By answering a want-ad
- ☐ 2. Private employment agency
- ☐ 3. State employment agency
- ☐ 4. Help of school teacher
- ☐ 5. Help of school counselor
- ☐ 6. Help of school principal
- ☐ 7. Help of school placement service
- ☐ 8. Help of friend or relative
- ☐ 9. Through school coop program
- ☐ 10. Other than above

9. What are you doing now? (Mark all that apply.)

- ☐ 1. Employed full-time
- ☐ 2. Employed part-time
- ☐ 3. Attending college
- ☐ 4. Attending public trade/technical school
- ☐ 5. Attending private trade/technical school
- ☐ 6. Attending business-commercial school
- ☐ 7. In military service
- ☐ 8. Unemployed
- ☐ 9. Other (please specify) ______________________

10. Do you think you would have done better if you had taken vocational or technical training in high school?

☐ 1. Yes ☐ 2. No ☐ 3. Don't know

11.

ANSWER ONLY IF YOU HAVE A FULL-TIME JOB For each of the skill areas listed below, answer the four questions at the right. → Indicate your answers by marking appropriate boxes.	1 How important is this skill for your present job?				2 How much of this skill was learned in high school?				3 Where did you learn the most about this skill?					4 Do you feel the need for more instruction or training in this area? (Mark either Yes or No)
	1 Of No Real Importance	2 Slightly Important	3 Considerably Important	4 Of Critical Importance	1 Almost Nothing	2 Some, But Not Much	3 Large Amount	4 Almost All	1 High School Coop Program	2 High School Shop or Class	3 Apprentice Program	4 On Regular Job	5 Elsewhere	
1 MANUAL JOB SKILLS. Refers to skill at using or operating tools, equipment, materials, machines, etc., in your work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
2 JOB PRACTICAL KNOWLEDGE. Refers to practical everyday knowledge of work processes, methods, procedures, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
3 JOB THEORETICAL KNOWLEDGE. Refers to knowledge of basic principles and concepts underlying the practical trade work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
4 MATHEMATICAL SKILLS. Refers to ability to use arithmetic or higher mathematics to solve work problems.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
5 COMMUNICATION SKILLS. Refers to skill at speaking, writing, drafting, sketching, etc., to communicate ideas.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
6 READING AND INTERPRETIVE SKILLS. Refers to skill at reading printed matter, blueprints, tables, diagrams, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
7 CLERICAL SKILLS. Refers to skill at keeping records, making out reports, and other types of routine paper work.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
8 PERSONAL RELATIONS SKILLS. Refers to skill at dealing with people, such as customers, co-workers, other trades, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
9 SUPERVISORY SKILLS. Refers to skill at supervising others, e.g., instructing, directing, evaluating, planning, organizing, etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No
10 OTHER SKILLS. Add what you feel applies to your job and is not covered by the above. ____________________	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐ 1. Yes ☐ 2. No

12. Please give your frank opinion about the following items concerning your high school education. (Mark).

	ON THE WHOLE:			
	1. Poor	2. Satisfactory	3. Good	4. Excellent
1. Quality of school library facilities	☐	☐	☐	☐
2. Quality of instruction from academic teachers	☐	☐	☐	☐
3. Condition of shop furnishings and equipment	☐	☐	☐	☐
4. General physical condition of school	☐	☐	☐	☐
5. Guidance and counseling given to students	☐	☐	☐	☐
6. Help given students to find jobs	☐	☐	☐	☐
7. Opportunity for extra-curricular activities	☐	☐	☐	☐
8. Interest shown by teachers in student problems	☐	☐	☐	☐
9. Reputation of the school in community	☐	☐	☐	☐
10. Strictness of school in maintaining discipline	☐	☐	☐	☐

13. Please mark all kinds of education obtained since leaving high school, and provide the information requested about each. Put an asterisk (*) behind those you are presently attending. If you have not had any additional education since high school, mark here → ☐
Estimate your average hours per week over the total period attended. →

Mark Here	Type of Education	Major Subject or Course(s)	Dates Attended (Give Month & Year)		Leave Blank	Avg. Hrs. Per Wk. in School	Leave Blank
☐ 0	Two-year or junior college		Fr:	To:			
☐ 1	Four-year college/university		Fr:	To:			
☐ 2	Post-college graduate school		Fr:	To:			
☐ 3	Private trade/technical school		Fr:	To:			
☐ 4	Public trade/technical school		Fr:	To:			
☐ 5	Business-commercial school		Fr:	To:			
☐ 6	Adult continuation school		Fr:	To:			
☐ 7	Military specialist school		Fr:	To:			
☐ 8	Company course or school		Fr:	To:			
☐ 9	Correspondence courses		Fr:	To:			
☐ 10	Other (specify)		Fr:	To:			

14. **JOB HISTORY SINCE HIGH SCHOOL.** Start with your **FIRST** job after leaving high school. List **ALL** full-time jobs. List **ONLY** part-time jobs held six months or more, except if your present job is a part-time job. List the jobs in the order that you held them, up to and including your **PRESENT JOB.** (If self-employed, give **NET EARNINGS**, not **GROSS INCOME** of your business.)

	1	2	3	4	5	6	7	8	9	10
EXAMPLE	Starting Date Mo. 7 Yr. 53 Leaving Date Mo. 10 Yr. 54	What type of work did you do? MACHINIST APPRENTICE	Did job require move to new city? 1. ☐ No 2. ☒ Yes How many miles? 20	Full Time 1. ☐ Yes 2. ☒ No If part-time, how many hours per week, on average? 15	Self Employed 1. ☐ Yes 2. ☒ No	~~Was the work related to vocational course you took?~~ ~~1. ☒ Same trade studied.~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☒ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $ 1.25 per HR Earnings at Leaving Give $ per hr., wk., or mo. $ 1.50 per HR	Reason For Leaving Job NO WORK	Were you unemployed after leaving job? 1. ☒ Yes 2. ☐ No If Yes, how long? 5 MONTHS
1st JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
2nd JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very Dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
3rd JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
4th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
5th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average?	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?
6th JOB	Starting Date Mo.___Yr.___ Leaving Date Mo.___Yr.___	What type of work did you do?	Did job require move to new city? 1. ☐ No 2. ☐ Yes How many miles?	Full Time 1. ☐ Yes 2. ☐ No If part-time, how many hours per week, on average	Self Employed 1. ☐ Yes 2. ☐ No	~~Was the work related to vocational course you took?~~ ~~1. ☐ Same trade studied~~ ~~2. ☐ Highly related~~ ~~3. ☐ Slightly related~~ ~~4. ☐ Completely unrelated~~	On the whole, were you satisfied with the work? 1. ☐ Very satisfied 2. ☐ Satisfied 3. ☐ Dissatisfied 4. ☐ Very dissatisfied	Earnings at Starting Give $ per hr., wk., or mo. $_____ per _____ Earnings at Leaving Give $ per hr., wk., or mo. $_____ per _____	Reason For Leaving Job	Were you unemployed after leaving job? 1. ☐ Yes 2. ☐ No If Yes, how long?

ATTENTION: If you held more than six full and part-time jobs, please continue on the page enclosed. Be sure to include your present full-time and/or part-time job. Thank you.

15. **YOUR PRESENT JOB.** (Please give this additional information.)

1. *Present Earnings? Give $ per hour, week, or month.* $__________ per __________
2. Your Employer: ____________________

Street Address: ____________________
City-State: ____________________

16. Did you have any military service? ☐ 1. No ☐ 2. Yes → How many months? __________ Nature of work? __________

17. Were you unemployed for reason of health or hospitalization? ☐ 1. No ☐ 2. Yes → How many months? __________

> Part of our study concerns the interests, activities, and associations of high school graduates. We hope you will not regard this information too personal to give us. All is confidential. Please weigh your answers carefully.

18. How frequently do you talk about the following topics when you get together socially with others?

	ALMOST NEVER 1	INFREQUENTLY 2	FREQUENTLY 3	ALMOST ALWAYS 4
1. Your work	☐	☐	☐	☐
2. Religion	☐	☐	☐	☐
3. Politics	☐	☐	☐	☐
4. Business conditions	☐	☐	☐	☐
5. World affairs	☐	☐	☐	☐
6. National affairs	☐	☐	☐	☐
7. State affairs	☐	☐	☐	☐
8. Community problems	☐	☐	☐	☐
9. Your hobbies	☐	☐	☐	☐
10. Sports and athletics	☐	☐	☐	☐
11. Music, art, literature, etc.	☐	☐	☐	☐
12. Government matters	☐	☐	☐	☐
13. Labor union matters	☐	☐	☐	☐
14. Your family	☐	☐	☐	☐
15. Other (specify) __________	☐	☐	☐	☐

19. How frequently do you engage in the following types of leisure-time activities?

	ALMOST NEVER 1	INFREQUENTLY 2	FREQUENTLY 3	ALMOST DAILY 4
1. Reading newspapers	☐	☐	☐	☐
2. Engaging in craft hobbies (model building, jewelry making, etc.)	☐	☐	☐	☐
3. Reading professional or trade books and periodicals	☐	☐	☐	☐
4. Attending athletic events as a spectator	☐	☐	☐	☐
5. Attending plays, concerts, ballets, etc.	☐	☐	☐	☐
6. Watching television programs	☐	☐	☐	☐
7. Gardening (raising flowers, fruit trees, vegetables, etc.)	☐	☐	☐	☐
8. Reading general magazines (LIFE, LOOK, READERS' DIGEST, etc.)	☐	☐	☐	☐
9. Working at home shop activities (woodworking, metalworking, etc.)	☐	☐	☐	☐
10. Attending educational courses for self-improvement	☐	☐	☐	☐
11. Engaging in team sports (softball, football, etc.)	☐	☐	☐	☐
12. Engaging in performing arts (acting, singing, instruments, etc.)	☐	☐	☐	☐
13. Visiting or entertaining friends	☐	☐	☐	☐
14. Reading non-fiction books (biography, history, travel, etc.)	☐	☐	☐	☐
15. Collecting stamps, coins, rocks, or other items	☐	☐	☐	☐
16. Attending educational lectures and discussion groups	☐	☐	☐	☐
17. Engaging in individual sports (swimming, hunting, fishing, etc.)	☐	☐	☐	☐
18. Listening to music at home for pleasure	☐	☐	☐	☐
19. Going to the movies	☐	☐	☐	☐
20. Other (please write in) __________	☐	☐	☐	☐

20. Below is a list of different type organizations and associations. Mark the space which best describes your membership status in each type of organization, association, or club.

	NOT A MEMBER 1	INACTIVE MEMBER 2	ACTIVE MEMBER 3	PRESENTLY AN OFFICER 4
1. A church or a religious organization	☐	☐	☐	☐
2. Political organization	☐	☐	☐	☐
3. Service organization (Rotary, Lions, Kiwanis, etc.)	☐	☐	☐	☐
4. Sports club or athletic organization	☐	☐	☐	☐
5. Labor union	☐	☐	☐	☐
6. Fraternal organization (Elks, Masons, K. of C., etc.)	☐	☐	☐	☐
7. Veterans' organization	☐	☐	☐	☐
8. Business or trade association	☐	☐	☐	☐
9. Music or other cultural association	☐	☐	☐	☐
10. Local civic association	☐	☐	☐	☐
11. Youth organization (Scouts, Y.M.C.A., etc.)	☐	☐	☐	☐
12. Professional association	☐	☐	☐	☐
13. Other (specify) __________	☐	☐	☐	☐

21. Marital Status

☐ 1. Single
☐ 2. Married
☐ 3. Other

22. Race

☐ 1. White
☐ 2. Negro
☐ 3. Other

23. Religion

☐ 1. Protestant
☐ 2. Catholic
☐ 3. Jewish
☐ 4. Other
☐ 5. None

24. Do you have any disability or health condition that limits your employability?

☐ 1. Yes ☐ 2. No

THANK YOU FOR YOUR TIME AND EFFORT

THE SURVEY PROCEDURES

Description of Mailing Schedule

A maximum of seven mail contacts was planned to encourage graduates to return the questionnaire. A returned questionnaire terminated any further contacts.

The first contact consisted of (1) a letter signed by the graduate's former instructor and/or principal, (2) the questionnaire, and (3) a pre-addressed postage-paid airmail envelope for returning the questionnaire. A sample of the letter is shown opposite page 36.

The second contact consisted of a postcard, designed to thank the graduate if he had already returned his questionnaire and to remind him to do so if he had not as yet mailed the questionnaire. An exhibit of the postcard is shown opposite page 38.

The third contact consisted of a second postcard, having the signature name of the school principal. In effect, it reminded the graduate that his questionnaire had not yet been received, and urged him to mail in the completed questionnaire. An exhibit of this postcard is shown opposite page 38.

The fourth contact consisted of (1) a letter from Dr. John C. Flanagan, president of A·I·R, (2) a questionnaire on the possibility that the first one mailed had been misplaced or thrown away, (3) a brochure describing the study, and (4) a pre-addressed, postage-paid airmail return envelope. A sample of the letter is shown opposite page 40.

The fifth contact was a letter from the school principal, on regular school stationary. It reminded the graduate that his questionnaire had not yet been received, and stressed the need to learn from his experiences since graduating. He was urged to complete and return the questionnaire promptly. An exhibit of the letter is shown opposite page 42.

The sixth contact was another postcard, reminding the student to return the questionnaire. A specimen is shown opposite page 44.

The seventh and last contact was a letter from the graduate's former instructor (or the school principal, if the former instructor was no longer at the school). The letter made a personal appeal for cooperation. A specimen is shown opposite page 46.

The seven-contact strategy resulted from information obtained from the pilot studies, which indicated that a multiple contact procedure is essential for a high percentage of returns.

Description of Survey Materials

The results of the pilot studies suggested that returns would be greater if the time interval between successive mail contacts were kept short, i.e., several days rather than several weeks. However, because of return mail transit time, a very short between-contact interval would have meant asking graduates to complete the questionnaire a second time and possibly a third time after they had already mailed in their questionnaire. To avoid the confusion which might result from such circumstances, a between-contact schedule was adopted to minimize unnecessary requests. The schedule for the first of three series of mailings is shown in Table 10.

Table 10. SCHEDULE OF MAIL CONTACTS. (All contacts but the fourth were mailed from local post offices.)

Contact Number	Ordinal Day	Nature of Contact	Day Mailed	Date Mailed	Contact Interval
1	1	School letter plus questionnaire	Tues.	Sep. 15	—
2	4	Reminder/thank you postcard	Fri.	Sep. 18	3
3	10	Second reminder postcard	Thurs.	Sep. 24	6
4	24	A·I·R letter plus questionnaire	Thurs.	Oct. 8	14
5	38	Third reminder postcard	Thurs.	Oct. 22	14
6	52	Principal's letter plus questionnaire	Thurs.	Nov. 5	14
7	60	Final principal/instructor letter	Fri.	Nov. 13	8

The first series of mailings covered the graduates of 88 of the 100 schools. It was necessary to initiate a second and third series of mailings because all schools had not yet been visited at the time that the first series was initiated. The schedule of mailings of the second series was modified slightly to accommodate the Christmas holidays. The last series, involving the graduates of two schools that could not be visited as planned because of school problems, was mailed under a considerably accelerated schedule. The seven contacts were completed within a 36 day period. As anticipated, some duplicate questionnaires were received.

The Successive Contact Procedure

Before the first mailing was initiated, the high schools formerly attended by the graduates were oriented by mail on the procedure and mailing schedule that would be followed. A specimen set of the seven mail contacts was provided. School principals were requested to urge graduates who might check with the school to complete and return the questionnaire. The principals were also warned that there would undoubtedly be a trivial percentage of those contacted who would write or phone the school to protest the persistence of reminders to complete the questionnaire. They were urged to do whatever their judgment dictated to influence callers to return a completed questionnaire.

Prior to the first mailing, a procedure for addressing and mailing successive contacts was established. The key to this procedure was a standard data processing card which functioned as an envelope addressing master in an addressing machine. It also was used to record information about the graduate on his return, e.g., "address unknown", "military service overseas", "deceased", "date of questionnaire return", and similar control information. The card was designed to facilitate control of successive contacts to nonrespondents and processing returns for the status of mailing results. A specimen master card is shown in Figure 2.

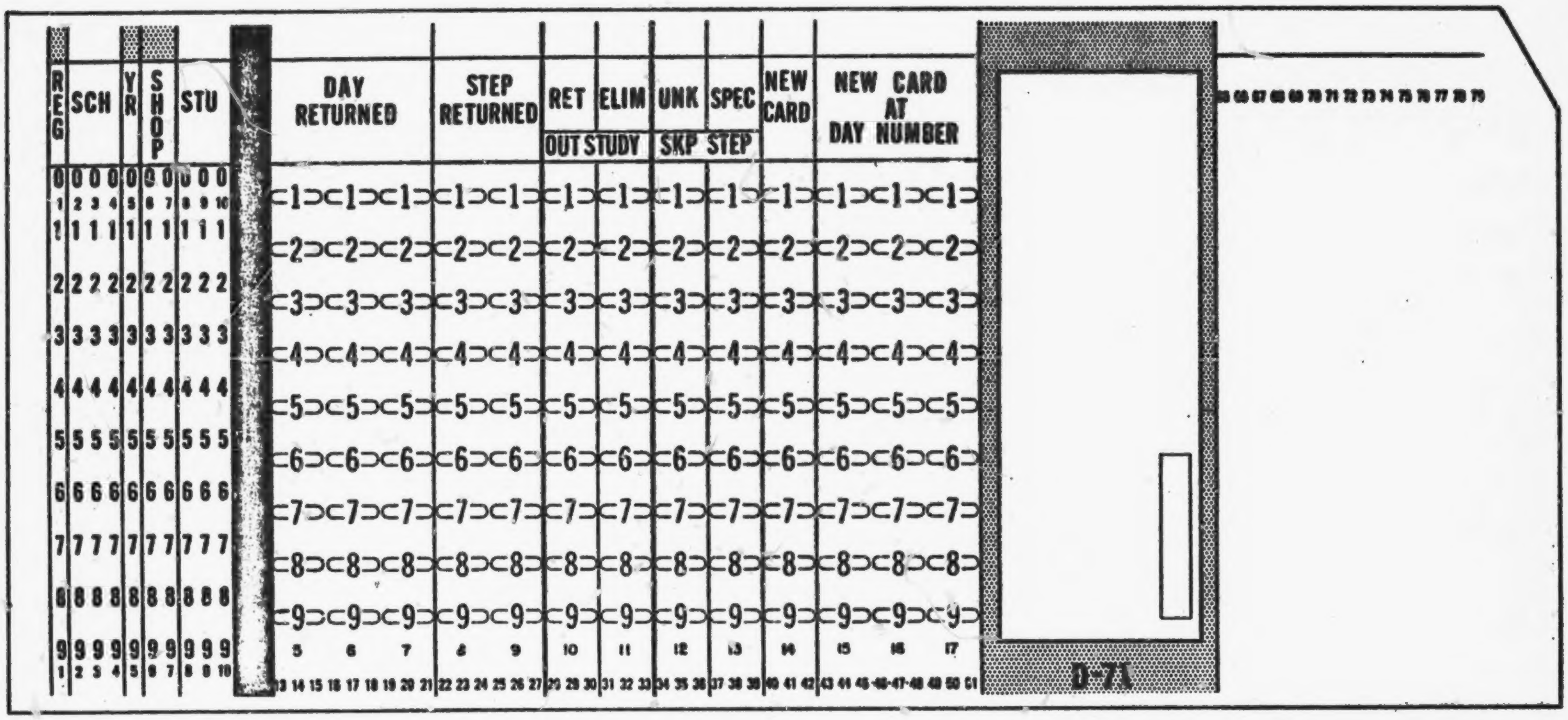

REG
SCH
YR
SHOP
STU
DAY RETURNED
STEP RETURNED
RET
ELIM
UNK
SPEC
OUT
STUDY
SKP
STEP
NEW CARD
NEW CARD AT DAY NUMBER
D-71

Figure 2. MAILING CONTROL CARD

Each master card contained a number which identified the graduate, the school he graduated from, the course he took, and the year he graduated. The cards were sequenced by school and by identification number with school groupings to form a master control deck.

When the material mailed to a graduate was returned "address unknown" by postal authorities, the graduate's card was removed from the master deck and placed into an "address unknown" file for additional processing later. Similarly, if information was received that the graduate was deceased or institutionalized, his master card was withdrawn and placed into an "eliminated" file.

When a questionnaire was received from a graduate, the date of receipt was noted on his master card, and the card was withdrawn from the addressing file and placed into a returned file, organized by school and graduate identification number.

This procedure made it a simple matter to address the next mailing with the balance of the master cards in the addressing file. The procedure was followed after each mailing, with the result that the non-respondent addressing deck was gradually reduced as cards were withdrawn for reasons described previously.

INITIAL CONTACT LETTER

The same contact letter and letterhead style was used for all schools. The signatures were simulated, with the permission of the instructors and principals.

The letters were mailed from the cities in which the schools were located to assure a local postmark, a tactic which lent authenticity to the letter.

WALTHAM VOCATIONAL HIGH SCHOOL / Waltham, Massachusetts

September 15, 1964

Mr. Keith Adams
914 Providence Avenue
Lima, Ohio

Dear Keith:

Our school is taking part in a nation study of vocational education. Our vocational courses, our shops and teachers have all been studied by a research team from the American Institute for Research. Now they plan to study the careers of one-hundred of our graduates - you have been selected to represent your school and graduating class.

You are the most important source of the information needed to help improve the vocational courses offered by the schools in this area. The things that only you can tell us about your vocational education and job experience will help other men seeking vocational training.

Please complete the questionnaire and use the pre-addressed, postage-paid envelope to return it as soon as possible. The information and opinions you give to the American Institute for Research will be treated as confidential. The Institute will give us a summary and analysis that will not be identified with you in any way. Your cooperation is important and will be appreciated by us all.

Thank you for your help.

Sincerely,

Lloyd F Van Ardale
Principal

George S Stanley
Instructor

VOCATIONAL EDUCATION SURVEY / American Institute for Research

SECOND CONTACT POSTCARD

The purpose of the postcard was to thank those who had already returned their questionnaires, and to remind those who had not returned the questionnaire to do so. The signature of the principal was simulated with his permission. The cards were mailed from the cities in which the schools were located.

THIRD CONTACT POSTCARD

The purpose of the postcard was to again remind and urge the graduate to return his questionnaire. The card intended to convey that the principal would be kept informed of those who had not as yet returned their questionnaires. The signatures were simulated. The cards were mailed from the cities in which the schools were located.

September 18, 1965

Thank you for completing the questionnaire mailed to you a few days ago. Your responses have a direct bearing on the improvement of vocational courses, teacher training, and shops. No one else can give us the insights and experience which you have - and which we need.

If your questionnaire is already in the mail, thank you for your help. If not, please do it today.

Lloyd F Van Ausdale
Principal

September 24, 1964

The American Institute for Research has informed me that your questionnaire has not been received.

I wish to urge you again to complete and return the questionnaire. This study is of national importance, and promises to do much to help vocational education in the United States. It is in keeping with the new emphasis given to vocational education by recent congressional legislation.

If your questionnaire has been mailed, thank you for your cooperation. If not, please complete and mail the questionnaire today.

Lloyd F Van Ausdale
Principal

FOURTH CONTACT LETTER

For a change of pace, the fourth contact was a letter from A·I·R's President, John C. Flanagan. It was felt that this letter would stress the nationwide aspects of the study, and show the importance attached to the study by the head of the research organization. The letter continued the theme that the graduate was selected and that he had an opportunity to make a contribution for the improvement of vocational education. The letter was mailed from Pittsburgh, together with another questionnaire and a brochure describing the study.

October 1, 1964

Mr. Keith Adams
914 Providence Avenue
Lima, Ohio

Dear Keith:

You were selected as one of the graduates to represent your high school in our nationwide educational study. We need your answers to our questions. They will help in improving the programs in all our schools. This is your opportunity to make a direct and constructive contribution to the improvement of our schools.

In the event you have misplaced the questionnaire we sent to you earlier, we are enclosing another copy. Please return it as soon as possible. Thank you for your time and effort.

Yours sincerely,

John C. Flanagan

John C. Flanagan, President
American Institute for Research

P. S. All information reported to the American Institute for Research will be treated as confidential. The summary and analysis given to participating schools will not identify graduates.

FIFTH CONTACT LETTER

The fifth contact used the regular school letterhead with the hope that it would add realism to the letter. The tone of the letter was friendly, although with an increased sense of urgency. The undertone was one that suggested failure to return the questionnaire would be letting the school down. The signature was simulated. The letters were mailed from the city in which the school was located.

WALTHAM PUBLIC SCHOOLS

VOCATIONAL HIGH SCHOOL

100 Summer Street
WALTHAM 54, MASSACHUSETTS

Telephone TWinbrook 3-8050

JAMES FITZGERALD
Superintendent

LLOYD F. VAN ARSDALE
Director

October 8, 1964

Mr. Keith Adams
914 Providence Avenue
Lima, Ohio

Dear Keith:

The American Institute for Research reports that you still have not completed and returned the questionnaire which was sent to you a short time ago. I want to personally request that you do so since it is very important to our school.

We look to our graduates to help us learn from their training and work experience. There is much that you can tell us that will influence future decisions about vocational courses. Please complete and return your questionnaire today.

Sincerely,

Lloyd F Van Arsdale
Principal

P. S. All information reported to the American Institute for Research will be treated as confidential. The summary and analysis given to participating schools will not identify graduates.

SIXTH CONTACT POSTCARD

The postcard was a reminder follow-up on the school principals' fifth contact letter. Its purpose was to activate those who mentally agreed to complete the questionnaire after receiving the letter from the principal, but had yet failed to do so. The signature was simulated. The cards were mailed from the cities in which the schools were located.

October 15, 1964

I want to personally remind you to complete and return the questionnaire we sent to you two weeks ago.

Your responses can be significantly meaningful and helpful to our school and the vocational training programs in our area. Do no underestimate the importance of the contribution you can make. Your school and job experience can help frame future decisions as to the course and contents of vocational education. Please complete and return your questionnaire today.

Lloyd F VanAusdale
Principal

FINAL CONTACT LETTER

The seventh and last contact with the nonrespondent graduate was a letter from the graduate's instructor. The principal's signature was used if the graduate's former instructor was no longer at the school. The letter was a personal plea for cooperation. Signatures were simulated and the letters were mailed from the cities in which the schools were located.

WALTHAM VOCATIONAL HIGH SCHOOL / Waltham, Massachusetts

October 23, 1964

Mr. Keith Adams
914 Providence Avenue
Lima, Ohio

Dear Keith:

As I wrote to you several weeks ago, our school has taken part in a national study of vocational education. You were selected as one of the graduates to represent our school. All that you have to do is quickly check-off the items that - as you see it - best answer the questions in the attached form.

It will mean a great deal to the school, and to me personally. Please complete the enclosed questionnaire and use the pre-addressed, postage-paid envelope to return it as soon as possible. The American Institute for Research guarantees the fact that anything you report to them will remain confidential. Please help - for old times sake, and for better times and better vocational training in the future.

Thank you for your time and effort.

Sincerely,

Lloyd F Van Ausdale
Principal

George A Stanley
Instructor

P. S. Mail the questionnaire tonight! Drop in for a visit when you are around - meanwhile, good luck.

2

QUESTIONNAIRE RETURNS AND SAMPLE CORRECTION

☐ Returns on Mailings to Graduates 1

☐ The Nature of the Graduate Sample 13

☐ Procedure for Sample Correction 21

CHAPTER 2 SUMMARY

Results of Mailings to Graduates

1. Questionnaire returns by year. The returns for 1953, 1958, and 1962 vocational graduates were 40.2, 46.4, and 60.8 per cent respectively, for a combined return of 50.5 per cent. A substantial percentage of the non-returns were "address unknown" cases.

2. Questionnaire returns by school. There were striking differences in the returns by school. The school returns ranged from less than 10 per cent to more than 90 per cent.

3. Other factors influencing returns. Returns from vocational schools were higher than from comprehensive schools. School enrollment was unrelated to rate of return. Type of program taken; i.e., vocational or academic, was unrelated to rate of return. There were definite regional differences in rate of return.

Nature of Graduate Sample

4. Representation by year. The usable returns for 1953, 1958, and 1962 graduates were 21, 30, and 44 per cent respectively of the total sample, which included some intermediate-year graduates.

5. Representation by type of school. The percentages of usable vocational-graduate returns from vocational and comprehensive schools were 59 and 41 per cent respectively of the total sample. The comparable school ratio was 50-50.

6. Representation by school enrollment. The percentages of usable vocational-graduate returns from schools with enrollment less than 500, between 500 and 1,500, and more than 1,500 were 33, 38, and 29 per cent respectively of the total sample. The comparable school ratio was 32-38-30.

7. Representation by region. The percentages of usable vocational-graduate returns from the eight geographic regions corresponded closely with the school representation among the eight regions.

8. Representation by race. The percentages of usable vocational-graduate returns from white and Negro graduates were 93 and 7 per cent respectively. A high address-unknown problem among Negro graduates contributed to the relatively low Negro representation.

9. Representation by trade. More than 25 T&I trades were represented among the usable returns. Five trades accounted for 57 per cent of the total sample (machinist, automobile mechanic, electrician, drafting, and printing).

(Continued in Appendix B)

RESULTS OF MAILINGS TO GRADUATES

Introduction

The total returns from the questionnaire mailings to graduates have an important methodological bearing on the treatment of survey data. Mail surveys of the type used in this study do not yield a 100 percent return. Where the return is substantially less than 100 percent, as is almost invariably the case, there is always the question of how "different" are the non-respondents from the respondents, and what would the findings have been had the non-respondents answered. For example, if a survey which yields a 30 percent return reports that all vocational course graduates were gainfully employed in the trades for which they were trained within two months after graduation, the reader must wonder what would the finding be if the other 70 percent had returned their questionnaires.

In this section, the returns of the questionnaire mailings are presented as a background for the discussion of the procedure used to correct the sample for "address unknown" cases and "non-respondent" cases.

Questionnaire Returns by Year

The returns of the questionnaire mail-out can be categorized as follows:

1. Address unknowns: Mailings returned by authorities for reasons of "insufficient address," "no such address," or "not located at address."
2. Returns based on initial mailings: Returns expressed as a percentage of the number of graduates to which questionnaires were mailed.
3. Returns based on cases contacted: Returns expressed as a percentage of the number of graduates who did not have an "address unknown" outcome.

4. **Non-respondents**: The percentage obtained by subtracting the percentage of returns based upon cases contacted from 100 percent.

The returns for vocational course graduates are shown in Table 11.

Table 11. VOCATIONAL COURSE GRADUATE RETURNS

Types of Contacts and Returns	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Initial mailing to graduates	2945	—	3654	—	4199	—	10758	—
Cases returned "address unknown"	959	32.6	1052	28.8	621	14.8	2632	24.5
Cases contacted by mailings	1986	67.4	2602	71.2	3578	85.2	8166	75.5
Returns (based on initial mailing)	1185	40.2	1694	46.4	2555	60.8	5434	50.5
Returns (based on cases contacted)	1185	59.7	1694	65.1	2555	71.4	5434	66.6

As was expected, percentages of address unknown cases increased as a function of years out of school: 14.8 percent for 1962 graduates, 28.8 percent for 1958 graduates, and 32.6 for 1953 graduates. The longer the graduate had been out of school, the less satisfactory were the addresses obtained from school personnel.

The above trend also influenced the percentages of returns based upon initial mailings. These percentages were 60.9 for 1962 graduates, 46.4 for 1958 graduates, and only 40.8 for 1953 graduates. These are the figures that make it desirable that the questionnaire returns be corrected for address unknown and non-respondent cases.

The percentages of returns based upon cases assumed to have been contacted were substantially greater: 71.4 percent for 1962 graduates, 65.1 percent for 1958 graduates, and 59.7 percent for 1953 graduates, for an overall return of 66.6 percent based upon cases contacted. The latter percentages clearly indicate that recent graduates were more cooperative in returning questionnaires, thereby confirming the results of the pilot study.

How did the returns from academic course graduates compare with those from the vocational graduates? The data are shown in Table 12.

Table 12. ACADEMIC COURSE GRADUATE RETURNS

Types of Contacts and Returns	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Initial mailing to graduates	1096	—	1184	—	1215	—	3494	—
Cases returned "address unknown"	441	40.2	356	30.1	166	13.7	963	27.6
Cases contacted by mailings	655	59.8	828	69.9	1049	86.3	2531	72.4
Returns (based on initial mailing)	431	39.3	569	48.1	798	65.7	1798	51.5
Returns (based on cases contacted)	431	65.8	569	68.7	798	76.1	1798	71.1

The trends reported for vocational graduate returns are confirmed by the academic graduate returns: (1) The greater the number of years since graduation, the greater the percentage of address unknown cases. Whereas, only 13.7 percent of the 1962 graduates were address unknown cases, 40.2 percent of the 1953 academic course graduates were address unknown cases. This indicates one of the major problems of doing surveys of this kind with graduates of many years past. (2) Based upon cases assumed to have been contacted, the percentage of returns decrease as the number of years since graduation increase. The recent graduate is more cooperative in returning the questionnaire. This may be a reflection of the dwindling influence of the school on the graduate as the years go by. Appeals based upon school loyalty apparently diminish in effectiveness as the years since graduation increase.

Questionnaire Returns by School

Are there significant differences between schools in terms of percentage of address unknown cases and percentage of respondents based upon numbers assumed to have been contacted? The answer is of value because it describes variation in school representation in the total sample. Chapter 1 made clear that the 100 schools differed widely in terms of number of graduates selected for follow-up study. The two problems of address unknown cases and non-respondent cases also contributed to unequal sample representation of the schools in the total sample.

Table 13 shows a frequency distribution of the schools in terms of percentage of address unknown cases. The individual school differences are readily apparent. Even for the most recent graduating class of the study, the class of 1962, three schools had between 41 and 50 percent of their graduates in the address unknown category. At the other extreme, 14 schools had 10 percent or fewer of their class of 1953 graduates in the address unknown category. What accounts for the school differences? Certainly one answer is that some schools make a vigorous effort to maintain contact with vocational course graduates, whereas most do not. Mobility in terms of address changes is obviously the basic answer. The reasons for differences in percentages of address changes from one school community to another can not be convincingly established by the data available.

Table 14 shows a frequency distribution of the schools in terms of percentage of returns based upon total number of school graduates to whom questionnaires were mailed. The differences between schools are the product of differences in numbers of address unknown and non-respondent cases. Notice the wide range of differences for each of the three class years. The differences emphasize the need for correcting the sample on the basis of individual schools as well as year of graduation.

The frequency distribution of the schools in terms of percentage returns based upon the numbers assumed to have been contacted is shown in Table 15. The range of differences between schools is striking. The percentages of returns

Table 13. FREQUENCY DISTRIBUTION OF SCHOOLS IN TERMS OF PERCENTAGE OF ADDRESS UNKNOWN CASES BY YEAR OF GRADUATION

Percentage Class Intervals	Year of Graduation			
	1953	1958	1962	Combined
91 - 100	2	0	0	0
81 - 90	0	0	0	0
71 - 80	2	1	0	0
61 - 70	8	1	0	0
51 - 60	9	6	0	3
41 - 50	17	8	3	6
31 - 40	12	25	8	19
21 - 30	23	27	8	28
11 - 20	13	21	44	34
0 - 10	14	11	37	10
Total Address Unknowns	959	1052	621	2632
Percent Address Unknowns	32.9	28.8	14.8	24.5

Table 14. FREQUENCY DISTRIBUTION OF SCHOOLS IN TERMS OF PERCENTAGE RETURNS (BASED ON INITIAL MAILING) BY YEAR OF GRADUATION

Percentage Class Intervals	Year of Graduation			
	1953	1958	1962	Combined
91 - 100	1	1	1	0
81 - 90	2	2	6	0
71 - 80	4	7	20	10
61 - 70	9	13	24	15
51 - 60	8	16	19	22
41 - 50	18	17	13	26
31 - 40	20	24	10	16
21 - 30	15	14	6	9
11 - 20	10	6	1	2
0 - 10	13	0	0	0
Total Respondents	1185	1694	2555	5434
Percent Respondents	40.2	46.4	60.4	50.5

for 1953 graduates who were not in the address unknown category ranged from less than 10 percent for ten schools to more than 90 percent for five schools. The school differences are undoubtedly, in part, a reflection of differences in feelings of loyalty toward schools by their graduates. The mail contacts relied heavily upon the theme of helping the school and vocational education by returning the questionnaire. The use of principal and instructor signatures, and school letterheads gave added reality to the appeal. The fact that the graduates of schools responded differentially over such a wide range of return rates suggests the influence of strong attitudes toward schools. This interpretation is supported by the notes and letters that often accompanied questionnaires, and sometimes came without questionnaires. Many of the respondents wrote, in effect, that they completed the questionnaire in return for help given to them when they were in school or in need of a job. A non-respondent wrote to say, among other things, he would not complete the questionnaire because the school had never done him much good.

Table 15. FREQUENCY DISTRIBUTION OF SCHOOLS IN TERMS OF RESPONDENTS (BASED ON CASES CONTACTED) BY YEAR OF GRADUATION

Percentage Class Intervals	Year of Graduation			
	1953	1958	1962	Combined
91 - 100	5	5	7	0
81 - 90	8	12	20	12
71 - 80	23	17	22	30
61 - 70	16	26	26	20
51 - 60	14	14	10	20
41 - 50	10	13	8	10
31 - 40	6	8	6	8
21 - 30	5	5	1	0
11 - 20	3	0	0	0
0 - 10	10	0	0	0
Total Respondents	1185	1694	2555	5434
Percent Respondents	59.7	65.1	71.4	66.6

Other Factors Influencing Returns

To what extent are differences in rates of returns attributable to such variables as geographic region, type of school attended, enrollment of school attended, and type of graduate? The answers may be of methodological value to those researchers who may undertake to do similar surveys.

Table 16 compares the returns from vocational course graduates from comprehensive schools with those from vocational schools.

Table 16. VOCATIONAL GRADUATE RETURNS BY TYPE OF SCHOOL ATTENDED

Types of Contacts and Returns	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Initial mailing to graduates	6,160	—	4,645	—
Returned "address unknown"	1,446	23.5	1,168	25.1
Contacted by mailings	4,714	76.5	3,477	74.9
Returns (based on initial mailings) . .	3,224	52.3	2,210	47.6
Returns (based on cases contacted) . . .	3,224	68.4	2,210	63.6

Based upon number of cases contacted, the returns are greater for graduates from vocational schools (68.4 percent) than for comprehensive school graduates (63.6 percent). Perhaps the school "loyalty" factor mentioned earlier is greater among vocational school graduates.

Table 17 shows the relation between returns and school enrollment. The percentage of address unknown cases increases as a function of school enrollment. No doubt this is so because the large enrollment schools are located in metropolitan areas where address changes are more likely to occur than in small communities. Returns, however, were in the opposite direction. Based upon cases contacted, the returns were greatest from the above 1500 enrollment schools and least from the below 500 enrollment schools. No plausible explanation can be offered to account for the trend.

The regional returns for vocational graduates are shown in Table 19. There are sizable regional differences in the percentage of address unknown cases. The lowest regional percentage of address unknown cases was in the Northeast (11.9 percent); the highest percentage was in the Southeast (30.5 percent). The data suggest that the mobility of vocational course graduates varies widely among the geographic regions. Undoubtedly, differences in local employment opportunity are partly responsible. A more complete discussion of the mobility of vocational course graduates is reserved for Chapter 12.

Table 19 also shows substantial regional differences in the percentages of returns based upon the number assumed to have been contacted. The range is from a low of 59.7 percent (Southeast) to a high of 79.6 percent (Rocky Mountains). Why there should be such pronounced rate of return differences among the regions remains unanalyzed. The differences are interesting from the standpoint of questionnaire follow-up methodology, and make a problem worthy of research.

The regional differences in percentages of address unknowns and respondents based upon non-address unknowns point out the weakness of generalizing from regional surveys of this kind to the country as a whole.

A comparison of returns from Negro and white graduates is shown in Table 20. Lack of information on the race of graduates selected for follow-up make it impossible to analyze return data by race in the usual manner. The Negro graduates represented in Table 20 came from nine all-Negro enrollment schools. The white graduates analyzed in the table came from the nearest comparable type school, e.g. comprehensive or vocational with an all-white enrollment. A greater number of address unknown cases came from the Negro graduates (40.5 percent vs. 29.3 percent for the white graduates). Moreover, the rate of return based upon cases assumed to have been contacted was substantially smaller for the Negro graduates (54.1 percent vs. 69.1 percent for the white graduates). Clearly, race is a variable influencing rate of return.

Table 19. VOCATIONAL GRADUATE RETURNS BY GEOGRAPHIC REGION

Geographic Regions		Initial Mailing to Graduates	Returned Address Unknown	Contacted By Mail	Returns Based on No. Mailed	Returns Based on N. Contacted
Northeast	N	1271	151	1120	869	869
	%	—	11.9	88.1	68.4	77.6
Mideast	N	2822	575	2247	1561	753
	%	—	20.4	79.6	55.3	69.5
Great Lakes	N	1623	437	1186	753	753
	%	—	26.9	73.1	46.4	63.5
Plains	N	955	264	691	457	457
	%	—	27.6	72.4	47.9	66.1
Southeast	N	2967	906	2061	1230	1230
	%	—	30.5	69.5	41.5	59.7
Southwest	N	598	140	458	277	277
	%	—	23.4	76.6	46.3	60.5
Rocky Mountains	N	88	19	69	55	55
	%	—	21.6	78.4	62.5	79.7
Pacific	N	474	140	334	232	232
	%	—	29.5	70.5	48.9	69.5

No satisfactory explanations can be offered for the greater percentage of address unknown cases among the Negro graduates, and their lower rate of return. Undoubtedly, there are a number of contributing factors. A discussion of possible reasons would be unnecessary speculation and beyond the purposes of the report.

Table 20. VOCATIONAL GRADUATE RETURNS BY RACE OF GRADUATE * (SEE TEXT.)

Types of Contacts and Returns	Race of Graduate			
	Negro		White	
	N	%	N	%
Initial mailing to graduates	770	—	1064	—
Cases returned "address unknown"	312	40.5	312	29.3
Cases contacted by mailings	458	59.5	752	70.7
Returns (based on initial mailing) . . .	248	32.2	520	48.9
Returns (based on cases contacted) . . .	248	54.1	520	69.1

* Nine all-Negro enrollment schools were compared with the nine nearest all-white enrollment schools.

THE NATURE OF THE GRADUATE SAMPLE

The usable questionnaire returns from vocational and academic course graduates have been analyzed in terms of such independent variables as year of graduation, type of school attended, enrollment of school attended, type of course taken, race of graduate, and geographic region. Therefore, a description of the graduate sample in terms of the aforementioned variables is desirable.

Representation by Year

The total sample of usable vocational and academic course graduate returns is distributed among the three years of graduation as shown in Table 21. The larger number of 1962 graduates in the sample is a reflection of: (1) a larger number of 1962 graduates in the initial sample of graduates to whom questionnaires were mailed (Chapter 1, Table 5, p.13), and (2) fewer address unknown cases and a higher rate of return from the 1962 graduates (Chapter 2, Table 11, p. 2). The initially larger number of 1962 graduates reflects the trend of increasing size of graduating classes over the past fifteen years.

Table 21. DISTRIBUTION OF VOCATIONAL AND ACADEMIC GRADUATES BY YEAR OF GRADUATION (USABLE RETURNS)*

Types of Graduates	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Vocational graduates	1163	20.7	1658	29.5	2486	44.2	5327	100
Academic graduates	423	23.8	563	31.6	784	44.1	1780	100

* Approximately 20 vocational graduates fell into years adjacent to the three years indicated above.

The unequal representation of the three graduating class years in the total sample should be kept in mind where data are presented in terms of the total sample. In all such presentations, the data will also be presented separately for the three years of graduation.

Representation by Type of School

Table 22 shows the distribution of T & I graduates by type of school and year of graduation. For each of the three years of graduation, the number of vocational school graduates exceeds the number of T & I comprehensive school graduates. This is a reflection of the larger graduating classes found among the vocational schools, and the slightly higher rate of returns from the graduates of such schools. Thus, 58.6 percent of the graduates came from the 50 vocational schools and 41.4 percent came from the 50 comprehensive schools.

Table 22. DISTRIBUTION OF T & I GRADUATES WHO RETURNED USABLE QUESTIONNAIRES BY TYPE OF SCHOOL AND YEAR OF GRADUATION

Type of School	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Vocational *	715	61.5	939	56.6	1,453	58.4	3,122	58.6
Comprehensive	448	38.5	720	43.4	1,033	41.6	2,205	41.4

* Includes vocational, technical, and vocational-technical schools.

Representation by School Enrollment

The classification of schools into enrollment categories of less than 500, 500 and 1500, and more than 1500 was based upon enrollment figures for the 1963-64 school year. The latter figures were not the enrollment figures for the schools in 1953, 1958, and 1962. However, because of the broad enrollment categories, it was assumed that the actual enrollment figures for 1953, 1958 and 1962 would not have substantially altered the distribution of schools in the three enrollment categories. Table 23 shows the distribution of graduates according to school enrollment category.

Table 23. DISTRIBUTION OF T & I GRADUATES WHO RETURNED USABLE QUESTIONNAIRES BY SCHOOL ENROLLMENT AND YEAR OF GRADUATION *

School Enrollment	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Less than 500	419	36.0	545	32.8	786	31.6	1755	32.9
500 - 1500	438	37.7	650	39.2	918	36.9	2017	37.9
More than 1500 . . .	306	26.3	464	28.0	782	31.5	1555	29.2

* As of October, 1963.

The correspondence between the percentage distribution of schools in the three enrollment categories and the percentage distribution of all T & I graduates is shown in Table 24. The correspondence is nothing less than amazing since the graduate representation figures do not necessarily follow from the school representation figures.

Table 24. CORRESPONDENCE BETWEEN SCHOOL AND GRADUATE REPRESENTATION IN SCHOOL ENROLLMENT CATEGORIES

Total School Enrollment	School Representation		Graduate Representation	
	N	%	N	%
Less than 500	32	32.0	1755	32.9
500 to 1500	38	38.0	2017	37.9
More than 1500	30	30.0	1555	29.2

Representation by Region

The distribution of graduates among the eight geographical regions in the sample of usable returns is shown in Table 25. It will be seen that the regions are not equally represented in the final sample. This is as should be because the regions do not contribute equally to the total number of schools in the United States offering T & I vocational programs. The Table indicates that 50.7 percent of the graduates came from two regions, the Mideast and the Southeast.

Table 25. DISTRIBUTION OF T & I GRADUATES WHO RETURNED USABLE QUESTIONNAIRES BY REGION AND YEAR OF GRADUATION

Geographic Region	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Northeast	222	19.1	274	16.5	365	14.7	863	16.2
Mideast	375	32.2	495	29.8	674	27.1	1549	29.1
Great Lakes	121	10.4	233	14.0	390	15.7	749	14.1
Plains	107	9.2	121	7.3	226	9.1	454	8.5
Southeast	231	19.9	372	22.4	543	21.8	1153	21.6
Southwest	46	4.0	96	5.8	133	5.3	275	5.2
Rocky Mountains	12	1.0	20	1.2	23	0.9	55	1.0
Pacific	49	4.2	48	2.9	132	5.3	229	4.3

The correspondence between the percentage distribution of schools among the eight regions and the percentage distribution of T & I graduates in the final sample is shown in Table 26. On the overall, the correspondence is close.

Table 26. CORRESPONDENCE BETWEEN SCHOOL AND GRADUATE REPRESENTATION AMONG THE EIGHT GEOGRAPHIC REGIONS

Geographic Region	School Representation		Graduate Representation	
	N	%	N	%
Northeast	11	11.0	869	16.0
Mideast	24	24.0	1561	28.7
Great Lakes	15	15.0	753	13.9
Plains	7	7.0	457	8.4
Southeast	29	29.0	1230	22.6
Southwest	8	8.0	277	5.1
Rocky Mountains . . .	1	1.0	55	1.0
Pacific	5	5.0	232	4.3
UNITED STATES	100	100.0	5435	100.0

Representation by Race

No effort was made to achieve a given ratio of the races in the final sample. Schools were selected without consideration for the racial composition of students. Within stratification of region, size of enrollment, and type of school, chance factors alone governed the selection of schools, with the exception of six schools previously mentioned. The ratio of races represented in the sample of usable returns is shown in Table 27. The data is based upon information received from the questionnaire returns. Race was not specified on 116 of the returns.

Table 27. DISTRIBUTION OF T & I GRADUATES WHO RETURNED USABLE QUESTIONNAIRES BY RACE AND YEAR OF GRADUATION

Race of Graduate	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
White	1106	95.9	1501	92.8	2222	91.8	4847	93.0
Negro	44	3.8	111	6.9	188	7.8	344	6.6
Other	3	0.3	6	0.4	10	0.4	19	0.4

The Negro graduates constitute only 6.6 percent of the total sample, much less than what should be expected on the basis of chance, given the ratio of white to Negroes in the total population. A partial explanation is the higher number of address unknown cases among the Negro graduates, and the lower rate of return from those who were contacted. The low percentage of Negro representation in the total sample is unfortunate from the standpoint of exploring racial differences in post-high school occupational and educational experiences. The comparisons have been made. They would have been on firmer ground had the Negro representation been greater.

Representation by Trade

The representation of the different T & I trades among the graduates is shown by year of graduation in Table 28. The top five trades are machinists (16.6 percent), automobile mechanics (15.3 percent), electrician (11.0 percent), drafting all types (7.8 percent), and printing (6.9 percent). Thus, 57.4 percent of the total graduate sample is represented by five trades. The percentages may be interpreted as approximations of the percentages of graduates generated by the different T & I vocational courses based upon the total number of T & I graduates. Clearly, some trades have a very small representation in the total sample. Eight trades, for example, have less than a one

Table 28. DISTRIBUTION OF T & I GRADUATES WHO RETURNED USABLE QUESTIONNAIRES BY CLASS YEAR AND TRADE *

Trade and Industry Trades	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Automotive mechanics	162	13.99	245	14.8	398	16.0	813	15.3
Auto body repair	14	1.2	23	1.4	46	1.8	84	1.6
Airplane power mechanics	15	1.3	19	1.1	28	1.1	62	1.2
Air conditioning and heating . . .	0	0.0	5	0.3	12	0.5	17	0.3
Building trades (mixed).	22	1.9	44	2.6	46	1.8	112	2.1
Carpentry	58	5.0	73	4.4	79	3.2	210	3.9
Commercial art	16	1.4	25	1.5	41	1.7	82	1.5
Drafting (all types)	74	6.4	129	7.8	213	8.6	417	7.8
Electrician	128	11.0	196	11.8	262	10.5	587	11.0
Electronic technician	18	1.5	46	2.8	152	6.1	216	4.1
Food trades	4	0.3	12	0.7	28	1.1	45	0.8
Foundry	3	0.3	4	0.2	9	0.4	16	0.3
Machinist	200	17.2	301	18.2	381	15.3	886	16.6
Masonry	8	0.7	14	0.8	27	1.1	49	0.9
Mill and cabinetry	108	9.3	100	6.0	126	5.1	337	6.3
Metal trades	22	1.9	13	0.8	27	1.1	62	1.2
Painting and decorating	3	0.3	8	0.5	8	0.3	19	0.4
Plumbing	23	2.0	23	1.4	22	0.9	68	1.3
Printing	84	7.2	108	6.5	175	7.0	367	6.9
Radio and TV repair	31	2.7	35	2.1	63	2.5	129	2.4
Sheet metal fabrication	36	3.1	55	3.3	66	2.7	157	2.9
Shoe repair	1	0.1	3	0.2	6	0.2	10	0.2
Tailoring	2	0.2	9	0.5	17	0.7	28	0.5
Upholstery	6	0.5	7	0.4	4	0.2	17	0.3
Welding	42	3.6	48	2.9	104	4.2	194	3.6
Other than above	83	7.1	114	6.9	146	5.9	343	6.4

* Actual course titles do not in all cases correspond with the trade titles listed above.

percent representation. Sixteen of the twenty-five trades have less than a three percent representation.

Occupational and educational history data will not be presented in terms of the individual T & I trades, for the reason that many of the trades are represented by a relatively few number of graduates. The data for such analyses will be made available to researchers who wish to go a step beyond the present study.

PROCEDURE FOR SAMPLE CORRECTION

Logic of Sample Correction

When questionnaire returns are substantially less than 100 percent, the failure to apply a sample correction for non-returns can and often does lead to false conclusions. For that reason, it was deemed essential to attempt to correct the returns for address unknown cases and for non-respondent cases.

The logic of the correction is simple. A N percent random sample of the address unknown cases is subjected to an intensified effort to locate their whereabouts. Once located, an effort is made to get a questionnaire return of 90 percent or better from the sample of address unknown cases. The questionnaires so obtained are considered to be an estimate of what the returns would have been like had questionnaires been obtained from all address unknown cases. On that assumption, the small correction sample is replicated 100/N times to give a total corrective sample equal to the total number of address unknown cases. The resulting correction sample is then added to the original questionnaire returns. The same basic procedure is applied to the non-respondents, i.e. those who received but did not return a questionnaire.

The logic of the sample correction procedure has a source of potentially serious error that should be understood. The validity of the sample correction is very much dependent upon how accurately the N percent correction sample estimates the population which it seeks to gauge. Any error is multiplied 100/N times, and fed into the uncorrected returns. Thus, the corrected returns can be badly distorted with a sizable error in the correction sample. Since the probable error is a function of the size of the correction sample, the size of the latter should be sufficiently large to insure confidence in the estimate. A five percent correction sample was considered the minimum necessary for an adequate sample. However, even with a five percent correction sample, the possibility of serious error remains, and should be recognized.

The correction procedure has another source of potential error. The uncorrected sample was obtained by having the respondent answer the questionnaire without the presence of an A.I.R. representative. A substantial percentage of the correction sample was obtained mainly through an interview procedure conducted by representatives of a nationwide organization specializing in personnel search and interview. There is the possiblity that the two different techniques for getting the questionnaire data may differentially influence the data obtained. For example, the respondent may be inclined to hold back information in an interview situation that he might give in a non face-to-face situation. Or, the presence of the interviewer may influence the expression of information differently from what would be the case in a non-interview situation. Thus, the possibility of a systematic bias must be recognized when dealing with the type of sample correction procedure described earlier. Unfortunately, there exists no feasible alternative procedure.

The actual correction procedure used was somewhat more refined than described. It is described separately for non-respondent and address unknown cases below.

Sample Correction for Non-Respondence

The following steps were applied to correct the sample for non-respondence:

1. Determination of sample size. The total number of vocational non-respondents was 2732; the total number of academic non-respondents was 733. Five percent of these numbers gave a corrective sample of 136 for the vocational graduates and 37 for the academic graduates.

2. Determination of school contributions. Each school's percentage contribution to the total number of vocational non-respondents was determined. As nearly as could be approximated, the

number of graduates to be sampled from each school's population of non-respondents was determined so that each school's percentage contribution to the corrective sample for vocational non-respondents was the same as its percentage contribution to the population of vocational non-respondents.

3. Determination of class year contribution. Each graduating class year's percentage contribution to the total number of non-respondents was determined. The values were 40.3, 34.9, and 28.6 percent respectively for the classes of 1953, 1958, and 1962. On the basis of steps 2 and 3, a table was established specifying the number of non-respondents to be sampled by class year and school. Table 29 shows how a selected 11 of the 100 schools appeared in the table. The ratio of cases allotted to the three class years approximates the ratio of non-respondents from the three graduating class years.

Table 29. SEGMENT OF TABLE USED TO SELECT 5 PERCENT SAMPLE OF VOCATIONAL NON-RESPONDENTS

School	Number Selected			
	1962	1958	1953	Total
1	0	0	0	0
2	0	1	0	1
3	1	1	0	2
4	0	1	0	1
5	0	0	1	1
6	0	1	0	1
7	0	1	1	2
8	1	0	0	1
9	1	0	0	1
10	1	0	0	1
100	1	0	0	1
Number	40	45	51	136
Percentage	29.4	33.1	37.5	100

4. Selection of corrective sample. The non-respondent addressing masters were organized by school and class year, and sequenced by identification number within class year. Random sampling was assured by selecting every Nth card when it was necessary to draw more than one case from a given class year for a given school. Where it was necessary to draw only one card, it was alternately the first and last card in the appropriate deck for successive schools.

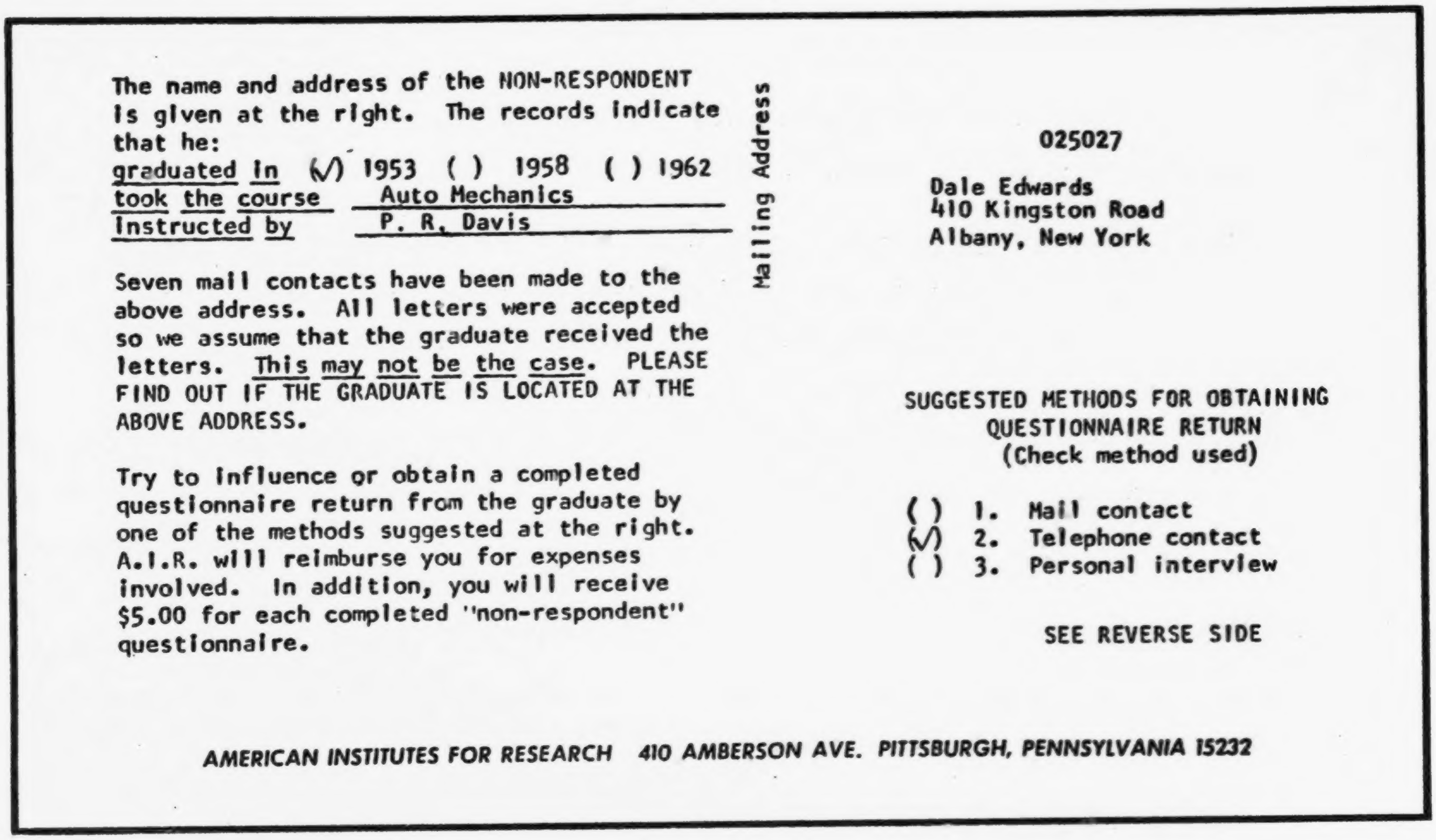
5. Solicitation of non-respondents by schools. The five percent corrective sample drawn was such that no school had more than 6 non-respondents. The small number of cases per school resulted in a decision to ask the schools to make an all-out effort to persuade their corrective sample non-respondents to return a questionnaire.

   Figure 3 shows the front and back of a card sent to the schools for each non-respondent case. Additional questionnaires were provided. The accompanying letter explained the importance of getting all corrective sample non-respondents to return a questionnaire.

   As a result of the efforts by school personnel, 27.9 percent of the vocational non-respondents and 35.1 percent of the general non-respondents returned questionnaires.

6. Interviews by credit agency personnel. It was assumed that many of the remaining non-respondents simply would not take the trouble to complete the questionnaires. The services of a credit agency were used to obtain the questionnaire information by personal interview. Such interviews brought the non-respondent corrective sample returns to 66.2 percent for vocational graduates and 64.9 percent for general graduates. The hard-core non-respondents were persons who could not be contacted for interview or who flatly refused to be interviewed.

(FRONT SIDE)



The name and address of the NON-RESPONDENT is given at the right. The records indicate that he:

graduated in (✓) 1953 ( ) 1958 ( ) 1962

took the course Auto Mechanics

instructed by P. R. Davis

Seven mail contacts have been made to the above address. All letters were accepted so we assume that the graduate received the letters. This may not be the case. PLEASE FIND OUT IF THE GRADUATE IS LOCATED AT THE ABOVE ADDRESS.

Try to influence or obtain a completed questionnaire return from the graduate by one of the methods suggested at the right. A.I.R. will reimburse you for expenses involved. In addition, you will receive $5.00 for each completed "non-respondent" questionnaire.

Mailing Address

025027

Dale Edwards
410 Kingston Road
Albany, New York

SUGGESTED METHODS FOR OBTAINING QUESTIONNAIRE RETURN
(Check method used)

( ) 1. Mail contact
(✓) 2. Telephone contact
( ) 3. Personal interview

SEE REVERSE SIDE

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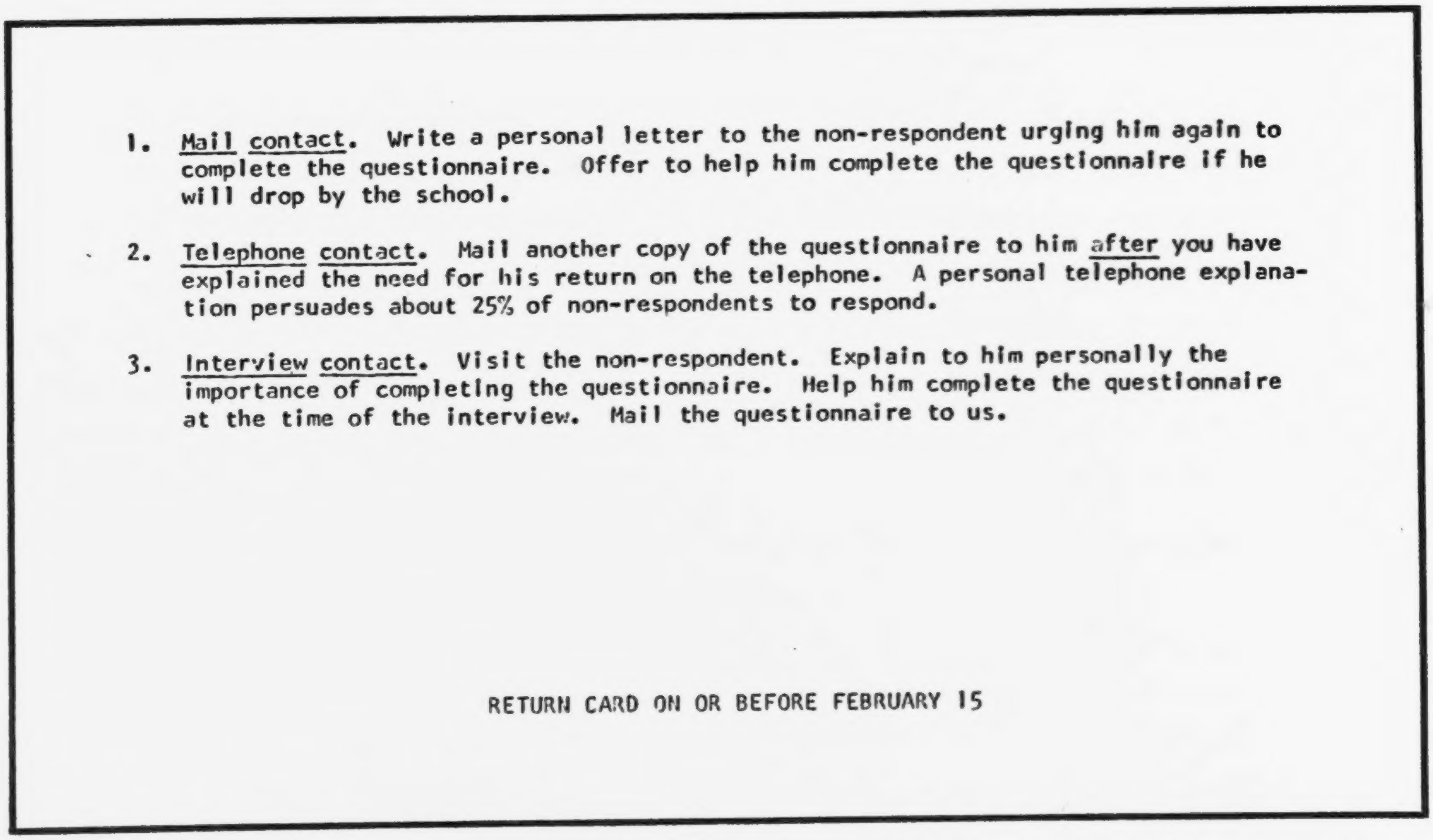
(BACK SIDE)



1. Mail contact. Write a personal letter to the non-respondent urging him again to complete the questionnaire. Offer to help him complete the questionnaire if he will drop by the school.

2. Telephone contact. Mail another copy of the questionnaire to him after you have explained the need for his return on the telephone. A personal telephone explanation persuades about 25% of non-respondents to respond.

3. Interview contact. Visit the non-respondent. Explain to him personally the importance of completing the questionnaire. Help him complete the questionnaire at the time of the interview. Mail the questionnaire to us.

RETURN CARD ON OR BEFORE FEBRUARY 15

Figure 3. FRONT AND BACK OF NON-RESPONDENT CARD MAILED TO SCHOOL TO GUIDE SCHOOL EFFORTS TO OBTAIN OR INFLUENCE A QUESTIONNAIRE RETURN.

A summary of the returns for the non-respondent corrective sample is given in Tables 30 and 31.

7. Replication of questionnaire returns. The questionnaire data were coded and transferred to data-processing cards. The corrective sample data were stored on a separate data-processing tape to facilitate processing of corrected and uncorrected returns. The called-for replication of the five percent correction sample was achieved by computer programming.

SAMPLE CORRECTION FOR ADDRESS UNKNOWNS

The following steps were applied to correct the graduate sample for address unknown cases:

1. Determination of corrective sample size. The total number of vocational address unknowns was 2632; the total number of academic address unknowns was 963. Five percent of these numbers gave a corrective sample of 132 for the vocational graduates and 48 for the academic graduates.
2. Determination of school contributions. Each school's percentage contribution to the total number of vocational address unknowns was determined. Then, the number of address unknown graduates to be sampled from each school's total of address unknown cases was determined so that the school's percentage contribution to the corrective sample was the same as its percentage contribution to the all school population of address unknown cases.
3. Determination of class year contribution. The percentage contribution of each of the years of graduation to the total number of address unknowns was determined. The values were 32.6, 28.8, and 14.8 percent respectively for the classes of 1953, 1958, and 1962. A table similar to Table 29 was constructed to distribute the number of address unknown cases to be included from each

Table 30. OVERALL RETURNS FROM 5 PERCENT CORRECTIVE SAMPLE OF VOCATIONAL GRADUATE NON-RESPONDENTS

Vocational Non-Respondents	1953		1958		1962		Total	
Corrective Sample Results	N	%	N	%	N	%	N	%
Size of 5% corrective sample	40	-	45	-	51	-	136	-
Returns from school effort	8	20.0	10	22.2	20	39.2	38	27.9
Returns from credit agency	11	27.5	27	60.0	14	27.4	52	38.2
TOTAL RETURNS	19	47.5	37	82.2	34	66.7	90	66.2
Refused to be interviewed	5	12.5	5	11.1	6	11.8	16	11.8
Could not be located	7	17.5	3	6.7	8	15.7	18	13.2
Dead, institutionalized, unreported	9	22.5	0	0.0	3	5.9	12	8.8

Table 31. OVERALL RETURNS FROM 5 PERCENT CORRECTIVE SAMPLE OF ACADEMIC GRADUATE NON-RESPONDENTS

Academic Non-Respondents	1953		1958		1962		Total	
Corrective Sample Results	N	%	N	%	N	%	N	%
Size of 5% corrective sample	11	-	13	-	13	-	37	-
Returns from school effort	6	54.5	2	15.4	5	38.5	13	35.1
Returns from credit agency	4	36.4	5	38.5	2	15.4	11	29.7
TOTAL RETURNS	10	90.9	7	53.8	7	53.8	24	64.9
Refused to be interviewed	0	0.0	3	23.1	1	7.7	4	10.8
Could not be located	1	9.1	1	7.7	3	23.1	5	13.5
Dead, institutionalized, unreported	0	0.0	2	15.4	2	15.4	4	10.8

school so that the total cases in the corrective sample would be distributed among the graduating class years in approximately the ratio as the total of address unknown cases was distributed among the class years.

4. Selection of names for corrective sample. The address unknowns' master addressing cards were organized by school and class year, and ordered by identification number within class year. Random sampling was assured by selecting every Nth card when it was necessary to draw more than case per class year from a given school. Where only one case was drawn it was alternately the first and last card for successive schools.

5. Search for address unknown cases by schools. School personnel were requested to make an intensified effort to locate the whereabouts of the corrective sample address unknown cases. The number of such cases per school ranged from 1 to 7. The burden of an additional search was therefore not considered excessive.

   Figure 4 shows the front and back of the type of card sent to the schools for each selected address unknown case. An accompanying letter explained the importance of locating the address unknown cases. The schools were requested to return all cards by a given date, with or without updated addresses.

   The schools were able to locate 47.7 percent of the vocational address unknowns and 42.5 percent of the academic address unknowns.

6. Scheduled contacts with address unknowns with a new address. The cases for which a new address was obtained were subjected to the same seven contact procedure described in Chapter 1 of this report. Second-time address unknown cases were turned over to a credit agency for further search and interview if located, along with the cases which the schools could not locate. The same organization handled interviews with non-respondents to maximize the corrective sample returns.

(FRONT SIDE)

The name and address at the right were obtained from your school records. The records indicated that he:
graduated in ( ) 1953 (✓) 1958 ( ) 1962
took the course Machine Shop
instructed by P. J. Roberts

All mail to the above address has been returned by the post office. IT IS ESSENTIAL THAT WE LOCATE THE ABOVE-NAMED GRADUATE. Please help us to locate him. At the right is a list of methods that can be used to locate him. Check whatever methods have been used to locate him, even if they were unsuccessful.

On the reverse side, record better contact addresses. Record even a partial address if you cannot determine the exact address. RETURN THE CARD TO US IN THE SPECIAL ENVELOPE PROVIDED.

Thank you for your time and effort.

Record Address

028056

Mr. Keith Adams
914 Providence Avenue
Lima, Ohio

SUGGESTED METHODS FOR LOCATING GRADUATE
(Mark (✓) methods used)

( ) 1. Check local telephone directory
( ) 2. Check city inhabitant directory
( ) 3. Inquire among school instructors
( ) 4. Check with parents or relatives
( ) 5. Check with known past employers
( ) 6. Check with guidance counselor
( ) 7. Check with former neighbors
( ) 8. Ask teachers to ask their students
( ) 9. Check at church formerly attended
( ) 10. Check with persons who graduated from same course in same year

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(BACK SIDE)

1. GRADUATE'S PRESENT ADDRESS

Name
Number Street
City State

2. PARENTS' PRESENT ADDRESS

Name
Number Street
City State

3. PRESENT EMPLOYER'S ADDRESS

Name
Number Street
City State

4. PAST EMPLOYER'S ADDRESS

Name
Number Street
City State

5. CLOSE FRIEND'S ADDRESS

Name
Number Street
City State

6. RELATIVE'S ADDRESS

Name
Number Street
City State

Figure 4. FRONT AND BACK OF ADDRESS UNKNOWN CARD MAILED TO SCHOOL TO GUIDE SCHOOL EFFORTS TO LOCATE ADDRESS UNKNOWN CASES.

A summary of the returns for the address unknown corrective sample is given in Tables 32 and 33.

7. Replication of questionnaire returns. The same procedure was followed for the five percent correction sample of address unknowns as was described for the non-respondent correction sample.

USE OF CORRECTED SAMPLE DATA

The data presented in the body of this report is uncorrected data, i.e. data obtained from the seven mail contacts made with the graduates. The corrected sample data is presented selectively in the Appendix wherever: (1) the nature of a particular analysis makes it desirable that the results be known in terms of both corrected and uncorrected data, and (2) the conclusions drawn from the uncorrected sample for a given analysis differ in substance from those drawn from the corresponding corrected sample data.

An explanation is appropriate of why corrected data was not used exclusively. Earlier, two potential sources of error in the sample correction procedure were pointed out. The extent to which those errors influenced the corrected sample data is indeterminate. Under the circumstances, it seemed advisable to present the study findings in terms of uncorrected data in the body of the report, particularly in view of the importance of the data for research and action guidelines.

Table 32. OVERALL RESULTS OF THE 5 PERCENT CORRECTION SAMPLE OF VOCATIONAL ADDRESS UNKNOWN CASES

Vocational Address Unknown Correction Sample Results	1953		1958		1962		Total	
	N	%	N	%	N	%	N	%
Size of 5% correction sample	48	-	53	-	31	-	132	-
Revised addresses from schools	19	39.6	30	56.6	14	45.2	63	47.7
Returns from A.I.R. mailings	15	31.2	16	30.2	7	22.6	38	28.8
Returns from credit agency	11	22.9	13	24.5	6	19.4	30	22.7
TOTAL RETURNS	26	54.2	29	54.7	13	41.9	68	51.5
Could not be located in U.S.	18	37.5	18	34.0	11	35.5	47	35.6
Refused to be interviewed	3	6.2	6	11.3	1	3.2	10	7.6
Dead, institutionalized, unreported	1	2.1	0	0.0	6	19.4	7	5.3

Table 33. OVERALL RESULTS OF THE 5 PERCENT CORRECTION SAMPLE OF ACADEMIC ADDRESS UNKNOWN CASES

Academic Address Unknown Correction Sample Results	1953		1958		1962		Total	
	N	%	N	%	N	%	N	%
Size of 5% correction sample	22	-	18	-	8	-	48	-
Revised addresses from schools	6	27.3	9	50.0	2	25.0	17	35.4
Returns from A.I.R. mailings	5	22.7	4	22.2	2	25.0	11	22.9
Returns from credit agency	6	27.3	3	16.7	2	25.0	11	22.9
TOTAL RETURNS	11	50.0	7	38.9	4	50.0	22	45.8
Could not be located in U.S.	10	45.4	10	55.6	2	25.0	22	45.8
Refused to be interviewed	1	4.5	0	0.0	0	0.0	1	2.1
Dead, institutionalized, unreported	0	0.0	1	5.6	2	25.0	3	6.2

3

DERIVED MEASURES AND THEIR CHARACTERISTICS

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☐ Non-Occupational History Measures 15
☐ Derived Measure Reliability and Stability 23
☐ Derived Measure Intercorrelations 29
☐ Derived Measures as Evaluation Tools 47

CHAPTER 3 SUMMARY

Dimensions of Description

1. The post-high school experiences of the vocational and academic graduates are described in terms of relevant occupational and non-occupational dimensions.

2. The occupational dimensions selected for description included general job placement time, related job placement time, employment security, employment stability, job satisfaction, job relatedness to training, first job starting earnings, present job earnings, and earnings progression.

3. The non-occupational dimensions selected for description included mobility, college education, non-college education, conversational interests, leisure activities, organization affiliations, attitude toward former school, amount of trade, and learning attributed to former school.

Occupational and Non-Occupational Measures

4. Derived measures. For each dimension of description not covered by raw data, a derived measure was developed. Consult the text for the equations that define the measures.

Derived Measure Reliability and Stability

5. Occupational measure reliability. Split-half reliability estimates reported indicate that all occupational measures are significantly reliable with the exception of earnings progression.

6. Occupational measure stability. Between-year stability estimates indicate that all occupational measures are significantly stable over the years with the exception of employment security, job mobility, and job stability.

7. Non-occupational measure reliability. Split-half reliability estimates reported indicate that all non-occupational measures are significantly reliable.

8. Non-occupational measure stability. Between-year stability estimates indicate that all non-occupational measures are significantly stable except the non-college education index.

(Continued in Appendix B)

THE BASIC DIMENSIONS OF DESCRIPTION

Two Methods of Description

There are two basic ways of describing the post-high school occupational, educational and other experiences of the vocational course graduate. The first method is a point-in-time description of where he stands at a specified time. For example, does he have a job three months after graduation? The second method is a longitudinal summary of his experiences since leaving high school. For example, what percentage of his employable time was spent in full-time employment since leaving high school?

A good example of the point-in-time type of description is the follow-up studies reported for the North Atlantic Region by the United States Office of Education. The basic procedure is to contact the graduate a few months after graduation and ask him to report his employment status. Excluding those who can not be accounted for, responses are reported under two broad headings: (1) available for employment and (2) unavailable for employment. The latter are reported in terms of (1) percentage in military service, (2) percentage in full-time school, (3) percentage unavailable for employment for reasons other than military service or school. The former are reported in terms of (1) percentage working in jobs related to training, (2) percentage working in jobs unrelated to training, and (3) percentage unemployed.

The point-in-time description has the strong advantage of simplicity. The graduate answers a few simple questions about his status at the time. It also has a serious weakness. It provides a static picture of the graduate at one point in time, and nothing more. For example, if he is in military service, it does not tell us what happened to him when he returned to civilian life? Did he go to school? If not, how long did it take him to get a job? Or, if he was unemployed when surveyed, how long did his unemployment last? What kind of a job did he eventually get?

The point-in-time description can be misleading. For example, when the North Atlantic follow-up study for the 1958 graduates reports 17.4 percent in military service, 9.8 percent continuing in full time school, and 7.1 percent unemployed, is the unemployment picture a half-story? How many went into service because they could find no job? How many returned to full-time school because jobs were not available?

The alternative method is the longitudinal or through-time description. It describes the graduate's experiences since leaving high school by summarizing those experiences, preferably in quantitative ways. For example, how long did it take him to get his first job? How many jobs has he held? How much unemployment has he experienced? How have his jobs been related to the trade he studied in high school? Answers to such questions are historical summaries rather than point-in-time descriptions.

The longitudinal method of description, while not without disadvantages, is more capable of providing a complete picture of the graduate's post-high school career. For that reason, it is the basic method used in this study.

Derived Measures and Their Meaning

The raw data obtained from questionnaire returns does not usually lend itself directly to longitudinal description. It must be converted into derived measures that, in effect, integrate individual events of post-high school experience. Thus, for example, the months of employment spent on each of several jobs may be integrated into a measure which expresses the total time (months) employed since leaving high school as a percentage of total employable time in months. For convenience of dimension, such measures are given a name. The measure cited, for example, has been designated "employment security."

To adequately describe the salient features of the graduate's post-high school career, it was necessary to develop a number of derived measures. These measures introduce concepts not normally found in the literature of vocational education, e.g. employment security, job relatedness, earnings progression, job stability, and others. Whenever new concepts are introduced that are tagged with names that suggest meanings, there is a hazard that people will attach meanings to the concepts beyond what is intended. The only meaning of the concepts introduced by the derived measures is the meaning given to them by the operations of converting raw data into derived measures. In other words, the meanings of the derived measures are not given to them by their names or by the connotations of their names, but by the equations which describe how they are derived. Much reader misunderstanding will be avoided if this is kept in mind.

Major Areas of Description

The initial problem that confronts any attempt to describe the post-high school careers of vocational course graduates is that of deciding the dimensions to be described. Even when the problem is narrowed down to selecting only dimensions which have a potential for evaluating the effectiveness of vocational education, there is still considerable choice. Limitations of budget, and of how much graduates will tolerate in the way of information-giving also have to be considered.

Three broad areas of description were decided upon. They were:

1. Occupational history since graduation.
2. Educational history since graduation.
3. Present interests, activities and affiliations.

It was felt that these areas had the greatest potential for dimensions that might be of use in the evaluation of vocational education. The dimensions associated with each of these areas, together with the question that prompted their inclusion in the study are identified in the sections that follow.

Occupational History Dimensions

The dimensions that describe the vocational graduate's occupational history are probably the most important from the standpoint of potential measures for evaluating vocational education. Of those identified, some were selected because of their undeniable face validity as evaluation tools. Others were selected because of misgivings about their use as evaluation yardsticks. Still others were selected because they provided essential information, though not necessarily related to evaluation.

The ten dimensions selected are as follows:

1. General job placement. How quickly after graduation does it take the graduate to find full-time employment?
2. Related job placement. How quickly does it take him to find full-time employment in a field related to his vocational training?
3. Employment security. How much of his post-graduation employable time has he spent in full-time employment?
4. Earnings progression. How have his earnings increased over his total employment period?
5. Job relatedness. To what extent have the jobs he has held been related to his high school vocational training?
6. Job satisfaction. How satisfied has he been with the jobs held since graduation?
7. Job stability. How many different employers has he worked for during his employment period?
8. Job mobility. How often and how far has he moved to other communities to find employment or to improve his employment status?
9. Initial earnings. What were his initial earnings on his first full-time job?
10. Present earnings. What are his present earnings, N years after graduation?

The measures used to describe each of the ten dimensions are discussed fully in a later section.

Educational History Dimensions

The amount and kind of additional education obtained by the vocational course graduate is undoubtedly related to how well he fares in the rapidly changing cross-currents of manpower requirements. For that reason, two educational dimensions were included:

1. College education. How much college education has the graduate accumulated?
2. Non-college education. How much non-college education, e.g. private trade school, public trade school, adult continuation school, etc. has he accumulated since graduation from high school?

The measures used to describe these dimensions of education are discussed in a later section.

Interests, Activities and Attitudes

There has been much speculation in the past about the narrowness of vocational education from the standpoint of the total individual. Some have felt that there were serious omissions in the content of a vocational education that permanently influenced the personal interests and activities of the vocational course graduate as an adult. The general lack of data in this area prompted the inclusion of three additional dimensions for description:

1. Conversational interests. How broad is the vocational graduate's range of conversational interests?
2. Leisure-time activities. How broad is the range of the graduate's leisure-time activities?

3. Organization affiliation. To what extent does he affiliate with, and take an active part in, community and other organizations?

In addition to the foregoing dimensions, the following were included for special purposes:

4. Attitudes about high school. What are his attitudes about different elements of his high school education, looking back from the vantage point of N years?

5. Acknowledged high school learning. How much of the skills and knowledges that he regards essential to his present work does he acknowledge as a contribution of his high school education?

The measures used to describe the above dimensions of description are discussed in a later section.

OCCUPATIONAL HISTORY MEASURES

This section describes more precisely the measures used to define the concepts related to occupational history. Not all of the measures are derived measures.

General Job Placement

This measure indicates in months the time it took the graduate to obtain his first full-time job after graduation. It is not a derived measure. Questionnaire respondents gave the information directly.

A graduate was not scored on this measure if he went into military service or continued full time in school after graduation without having had a full-time job in the interim period. Thus, the graduate who continued in school full time for a year after graduation, and then got a job was not scored because doing so would have distorted the general picture of how long it takes graduates to get jobs.

Related Job Placement

This measure reflects two elements: (1) how long in months it took the graduate to get his first full-time job, and (2) how related his first full-time job was to his high school training. It was determined for vocational graduates only. The equation for calculation is:

$$RP = \frac{R \cdot 100}{D} \qquad (1)$$

Where R = the weight given to the graduate's self-rating of the relation of his first job to the trade studied in high school, the weights being as follows:

4 = same trade
3 = highly related trade
2 = slightly related trade
1 = completely unrelated trade

D = the value given to the reported time it took to get the job, the values being as follows:

4 = directly from school to work
6 = within two weeks
8 = between two and four weeks
8 + N = where N = number of months required to obtain full-time job

The measure has a range from 100 to an indefinite smaller number, depending upon how long it took the graduate to get a full-time job. A score of 100 means he went directly from school to work in the same trade studied in school The data source for the measure is Items 7 and 14 on the questionnaire.

Employment Security

This measure describes how much of the graduate's time since high school was spent fully employed. It was determined for both vocational and academic graduates. The equation is:

$$ES = \frac{M \cdot 100}{E} \tag{2}$$

Where E = months of employable time = months between graduation date and June 1, 1964, minus (1) months in military service, (2) months of full-time school attendance, and (3) months of incapacity because of illness.

M = equivalent full-time months of employment. (Two months of 20 hours per week is equivalent to one full-time month)

The measure has a range from 0 to 100. It expresses total employed time as a percent of employable time. A score of 100 means the graduate was fully employed since leaving high school. The data source for the measure is Item 14 on the questionnaire.

Earnings Progression

This measure tells how much the graduate has increased his earnings per month per month of employed time. For example, if he worked ten months, and increased his earnings one hundred dollars per month in that period, his increase per month per month would be ten dollars. The equation for the measure is:

$$EP = \frac{(L - S) \cdot 176}{M} \qquad (3)$$

Where L = present hourly rate, or if unemployed, terminal hourly rate on last full-time job.

S = starting hourly rate on first full-time job.

176 = working hours in average month.

M = number of months of full-time work between graduation and June 1, 1964.

The measure describes the average dollar increase per month for the number of months of full-time employment. The data source for the measure is Item 14 on the questionnaire.

Job Relatedness

This measure describes the degree to which the graduate held jobs related to his trade training in high school. It is the mean of his ratings of how each full-time job held by him was related to his trade training. The equation is:

$$JR = \frac{\sum_{i=1}^{N} R_i}{N} \qquad (4)$$

Where R_i = value assigned to his rating of relatedness of his first job, the values being:

4 = same trade studied in school
3 = highly related trade
2 = slightly related trade
1 = completely unrelated work

N = number of full-time jobs rated

The measure ranged from 1 to 4. A score of 4 meant that the graduate held all jobs in the trade for which trained in high school. The data source for the measure is Item 14 on the questionnaire.

Job Satisfaction

This measure describes the degree to which the graduate claimed satisfaction with the jobs he held. The measure is based upon a self-rating of overall satisfaction with each job held. It is the mean of such ratings. The equation is:

$$JS = \frac{\sum_{i=1}^{N} S_i}{N} \qquad (5)$$

Where S_i = value assigned to his rating of satisfaction on first job, the values being:

4 = very satisfied
3 = satisfied
2 = dissatisfied
1 = very dissatisfied

N = number of full-time jobs rated

The measure ranged from 1 to 4. A score of 4 meant that the graduate was "very satisfied" with all jobs held. The data source for the measure is Item 14 on the questionnaire.

Job Stability

This measure describes the average employment in months with each employer. It reflects stability of the graduate-employer relationship. the equation is:

$$\overline{JS} = M \cdot N \qquad (6)$$

Where M = number of months of full-time work between graduation and June 1, 1964

N = number of full-time jobs held

Because the employable time, and therefore the employed time, increases as a rule as a function of years out of high school, the range of the measure varies for the three class years. Graduates of 1953, 1958, and 1962, who were fully employed with a single employer since leaving high school could have maximum scores of 132, 72, and 24 respectively. The data source for the measure is Item 14.

Job Mobility

This measure reflects the interaction of two elements: (1) how often the graduate has moved to another city to find employment or improve his employment status, and (2) how far in miles he moved. The equation is:

$$JM = N \sum_{i=1}^{N} D_i \qquad (7)$$

Where D_i = the value assigned to the distance moved to get first job, the values being:

2 = 50 miles
3 = 51 - 150 miles
4 = 151 - 300 miles
5 = 301 - 600 miles
6 = 601 - 1200 miles
7 = 1200 miles

N = number of new city moves

Two alternative job mobility measures were considered: (1) number of new city moves, and (2) sum of distance values of moves made. The selected measure correlated .83 with the first alternative and .92 with the second for the 1962 graduates. It was selected because it combined the elements of number of moves and distances moved while showing substantial correlations with both. The data source for the measure is Item 14 on the questionnaire.

First Full-Time Job Starting Earnings

This measure was directly given by the questionnaire return. All data was converted to a dollars per hour rate when not given in that form. Military pay rates and part-time pay rates were excluded. The data source is Item 14.

Present Full-Time Job Earnings

This measure was also given directly by the questionnaire return. All data was converted to a dollars per hour rate when not given in that form.

Where the graduate was unemployed at the time he returned the questionnaire, the terminal dollar per hour rate on his last full-time job was used instead. The substitution involved less than one percent of the cases. The data source is Item 14.

NON-OCCUPATIONAL HISTORY MEASURES

This section describes more exactly the measures used to define concepts related to post-high school education, to interests, activities and organization affiliation, and other matters unrelated to occupational history.

College Education

This measure gives the total hours of college level class attendance completed by the graduate up to June 1, 1964. The basic expression of college education in terms of completed class attendance hours avoids the lack of comparability that occurs when such education is expressed in terms of credits. Also, it was felt that the respondents could more readily communicate how much college education they had accumulated by indicating the average hours of class attendance per week and the number of months they attended college than to recall accurately number of credits accumulated. The measure includes undergraduate and post-graduate studies. The equation is:

$$CE = \sum_{i=1}^{3} 4H_i \cdot A_i \qquad (8)$$

Where H_i = average hours of class attendance per week at (1) two year college, (2) four year college or university, and (3) graduate school.

A = number of months college attendance

A score of 2160 hours is approximately equal to completion of thirty credits per year for four years, the number of credits normally required for an undergraduate degree. The data source for the measure is Item 13.

Non-College Education

This measure gives the total post-high school class hours accumulated during attendance of: (1) private trade/technical school, (2) public trade/technical school, (3) business or commercial school, (4) adult continuation school, (5) military specialist school, and (6) formal company training program. It is a raw quantitative expression of the amount of post-high school, non-college level education. The equation is:

$$NCE = \sum_{i=1}^{6} 4H_i \cdot A_i \qquad (9)$$

Where H_i = average hours of class attendance per week at one of six kinds of non-college education sources

A_i = number of months attendance at one of six kinds of non-college education sources

A comparable score can be calculated for each of the six sources of non-college level education. The combined score better served the purposes of the study. It gave an approximate measure of total non-college education obtained after high school. The data source for the measure is Item 13.

Conversational Interests

This measure describes the graduate's range of conversational interests. It is based upon his ratings of how frequently he talks about fourteen selected topics, e.g. his work, religion, politics, business conditions, world affairs, national affairs, and other topics often the subject of conversation. The measure is not concerned with any individual topic. It reflects breath of interest. The equation is:

$$CI = \sum_{i=1}^{14} F_i \; / \; 14 \qquad (10)$$

Where F_i = the value assigned to the graduate's frequency rating of engagement in a given conversation, i.e.

1 = almost never
2 = infrequently
3 = frequently
4 = almost always

14 = the number of conversational topics

The data source for the measure is Item 18 on the questionnaire.

Leisure Time Activities

This measure describes the graduates range of involvement in leisure time activities. It is based upon how frequently he engages in 19 selected leisure time activities. The nineteen leisure activities fall into six categories: (1) reading, (2) self-education, (3) hobbies and crafts, (4) athletics, (5) fine arts, and (6) entertainments. The equation integrates all categories as follows:

$$LA = \sum_{i=1}^{19} F_i \; / \; 19 \qquad (11)$$

Where F_i = the value assigned to the graduate's frequency rating of engagement is a given leisure activity, i.e.

1 = almost never
2 = infrequently
3 = frequently
4 = almost daily

19 = the number of listed leisure activities

The measure is an average of the frequency rating values. The basic equation can also be applied separately to the six categories of activities. The data source for the measure is Item 19.

Organization Affiliation

This measure describes the degree to which the graduate is an active participant in community organizations. It is based upon his claimed participation in twelve types of organizations found in most communities.

The equation is as follows:

$$OA = \sum_{i=1}^{12} P_i \Big/ 12 \qquad (12)$$

Where P_i = the value assigned to the graduate's claimed participation, i.e.

1 = not a member
2 = inactive member
3 = active member
4 = incumbent officer

12 = the number of listed types of organizations

The measure is the average of the values assigned to the graduate's twelve organization affiliation ratings. The data source for the measure is Item 20.

Attitude Toward High School

This is a composite measure of general attitude toward the former high school based upon the graduate's poor, satisfactory, good or excellent rating of each of ten factors, e.g. quality of shop instruction, condition of shop facilities, opportunity for extra-curricular activities, and similar factors. The assumption is that the mean of the individual factor ratings is a suitable representation of the graduate's general attitude toward his former school.

The equation is as follows:

$$AS = \sum_{i=1}^{N} R_i / N \qquad (13)$$

Where R_i = the value assigned to his rating of a given item, i.e.

1 = poor
2 = satisfactory
3 = good
4 = excellent

N_i = the number of items rated

The data source for the measure is Item 12.

Acknowledged High School Learning

The measure applies only to graduates who were at the time of the survey employed in the trade for which trained or a highly related trade. The graduates rated the importance of nine basic skills to their present job, e.g. manual job skills, mathematical skills, communication skills, clerical skills, and other skills. They then indicated how much of each skill was learned in high school, e.g. almost nothing, some but not much, a large amount, or almost all. The measure is the average of the separate products of ratings of importance and the corresponding ratings of acknowledged high school learning.

The equation is as follows:

$$AL = \sum_{i=1}^{N} I_i \cdot H_i \Big/ N \qquad (14)$$

Where

AL = acknowledged learning score

I_i = importance rating assigned given skill

H_i = learning rating assigned same skill

N = number of skills rated per instruction

The measure describes, in effect, how much of what is regarded as important or unimportant to the present job was learned in high school. The data source for the measure is Item 11 on the questionnaire.

Ordinal Day of Return

This measure indicates how many days after mailing the initial letter of request, it took to receive the graduate's questionnaire. The measure does not purport to describe any characteristic of the graduate such as responsiveness, cooperativeness, or similar trait characteristics. It was used primarily to determine whether any relationships existed between ordinal day of return and the previously described derived measures.

The absence of any such relationships could be interpreted as an indication that respondents to an eighth or ninth contact urging return of the questionnaire would not be significantly different in derived measure performance from the graduates who had responded to the standard seven or fewer contacts. The findings are discussed in a later section of this chapter.

DERIVED MEASURE
RELIABILITY AND STABILITY

Introduction

The occupational and non-occupational measures were developed with two purposes in mind. One was to describe what were considered major dimensions of occupational experiences and personal characteristics of vocational graduates. The other was to explore the interrelationships among the measures to assess their potential as criterion measures for evaluating vocational education systems.

The latter purpose requires a knowledge of their reliability. To be useful, a criterion (evaluative) measure must have some degree of reliability. If it does not, it cannot possibly be related to process variables, such as a school characteristics of one kind or another. Thus, school differences on a measure with zero order reliability are best attributable to chance factors rather than differences in school, student or community variables. Such a measure would be totally useless as an evaluative tool, no matter how much face validity it appeared to have.

The problem, then, is to estimate the reliability of the occupational and non-occupational measures. While a high degree of criterion measure reliability is desirable, it is not essential for the use of the measure. The necessary and sufficient condition is that there be a reliability estimate that is significantly different from zero. When it exists, low reliability will depress relationships between criterion measures or between process variables, such as school characteristics, and criterion measures. However, there are methods for estimating and correcting the influence of low reliability in a criterion measure. Hence, high reliability estimates are not essential.

This section provides both reliability and stability estimates for the occupational and non-occupational measures. Reliability estimates indicate the internal consistency of measures. Stability estimates indicate consistency over a period of time. It is desirable to know both characteristics of the measures to assess their potential as evaluative tools.

The Reliability Estimates

The reliability estimates were obtained as follows: For each year of graduation, the graduates of a given school who had a score on a particular derived measure were randomly assigned to two groups by assigning those that were in an odd ordinal number position on the data tapes to one group, and the even numbered cases to another group. A school mean was calculated for each group, thereby providing two mean scores for each measure for each school. Schools with less than ten cases for a given year were excluded from the reliability estimate on the reasoning that a split of less than ten cases would not provide an adequate estimate of the schools' performance on the measure. The reliability coefficients were obtained by correlating the pairs of school means for each measure.

The reliability coefficients are shown in Table 34. An asterisk indicates significance at the five percent or better level of confidence. The coefficients in parentheses are corrected for the split-half reliability procedure by use of the Spearman-Brown formula.

All but two of the occupational measures yielded statistically significant reliability coefficients, and thereby met a primary requirement for use as criterion measures. The two that did not are earnings progression and job stability. Their lack of reliability under the conditions that characterized the estimates does not preclude significant reliability estimates under more favorable conditions, such as a larger number of cases per school per year of graduation or a larger number of schools on which to base the estimates. They have been retained, therefore, for the analysis planned for all derived measures.

Two of the non-occupational measures, non-college education and acknowledged high school learning, failed to yield significant reliability coefficients for the 1953 graduates. Even these measures yielded significant, albeit not substantial, reliability coefficients for the graduates of 1958 and 1962.

The Stability Estimates

There are substantial differences between the schools on the derived measure means calculated for a given graduation class. For example, the highest

Table 34. SPLIT-HALF RELIABILITY COEFFICIENTS FOR OCCUPATIONAL AND NON-OCCUPATIONAL MEASURES (R = UNCORRECTED COEFFICIENTS, R-SB = SPEARMAN-BROWN CORRECTED COEFFICIENTS) *

Occupational Measures	YEAR OF GRADUATION								
	1953			1958			1962		
	N	R	R-SB	N	R	R-SB	N	R	S-B
General placement	40	.26	.41 *	54	.31 *	.47 *	76	.31 *	.47 *
Related placement	39	.70 *	.82 *	53	.34 *	.51 *	70	.55 *	.71 *
Employment security	46	.42 *	.59 *	67	.24 *	.39 *	76	.15	.26 *
Earnings progression	41	.23	.37 *	59	.10	.18	68	.08	.15
Job relatedness	48	.66 *	.80 *	65	.26 *	.41 *	77	.49 *	.66 *
Job satisfaction	48	.03	.06	65	.38 *	.55 *	77	.46 *	.63 *
Job stability	46	.25	.40 *	65	.03	.06	75	.13	.23 *
Job mobility	41	.23	.37 *	59	.45 *	.62 *	69	.56 *	.72 *
Initial earnings	46	.46 *	.63 *	65	.43 *	.60 *	74	.67 *	.80 *
Present earnings	46	.33 *	.50 *	68	.53 *	.69 *	77	.53 *	.69 *

Non-Occupational Measures	YEAR OF GRADUATION								
	1953			1958			1962		
	N	R	R-SB	N	R	R-SB	N	R	S-B
College education	50	.22	.36 *	72	.61 *	.76 *	86	.59 *	.74 *
Non-college education	46	.13	.23	66	.24 *	.39 *	86	.37 *	.54 *
Conversation interests	48	.30 *	.46 *	73	.32 *	.48 *	85	.41 *	.58 *
Leisure activities	48	.38 *	.55 *	70	.49 *	.66 *	86	.30 *	.46 *
Organization affiliation	49	.32 *	.48 *	71	.23 *	.37 *	86	.53 *	.69 *
Attitude toward H. S.	47	.49 *	.66 *	65	.55 *	.71 *	79	.56 *	.72 *
High school learning	43	.16	.28	60	.26 *	.41 *	68	.46 *	.63 *
Ordinal day return	51	.51 *	.68 *	74	.39 *	.56 *	86	.38 *	.55 *

* Significant at 5 percent or better level of confidence

school general placement mean was more than eighteen times greater than the lowest school mean on this measure. Table 35 shows a frequency distribution of the school means for the general placement measure calculated for the 1953 graduates. The school mean general placement is the average time required by the school's graduates to obtain their first full-time job.

Table 35. FREQUENCY, PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF GENERAL PLACEMENT SCHOOL MEANS

General Placement Class Intervals	School Distribution		
	N	%	C%
> 2.26	18	20.7	100.0
2.01-2.25	3	3.4	79.3
1.76-2.00	3	3.4	75.9
1.51-1.75	6	6.9	72.5
1.26-1.50	9	10.3	65.6
1.01-1.25	10	11.6	55.3
.76-1.00	11	12.6	43.7
.51- .75	15	17.3	31.1
.26- .50	5	5.8	13.8
0 - .25	7	8.0	8.0

The differences between schools on this measure are readily apparent. The other measures also show similar school differences. The differences raise an interesting question: Are the school differences in occupational and non-occupational measures relatively stable over a period of years? Are some schools, for example, consistently better than others in the time required to place graduates into full-time jobs?

The question of stable school differences is answered by obtaining stability estimates of the measures. Such estimates are obtained by intercorrelating the school means calculated for each measure from each year of graduation group. Table 36 shows the three stability coefficients obtained for each occupational and non-occupational measure.

Table 36. STABILITY ESTIMATING COEFFICIENTS FOR OCCUPATIONAL AND NON-OCCUPATIONAL MEASURES, OBTAINED BY INTERCORRELATING YEAR OF GRADUATION SCHOOL MEANS FOR THE LISTED MEASURES *

Occupational Measures	STABILITY ESTIMATES					
	1953-1958		1953-1962		1958-1962	
	R	N	R	N	R	N
General placement	.28*	34	.51*	36	.53*	48
Related placement	.54*	32	.66*	34	.56*	47
Employment security	.42*	40	.17	43	.18	77
Earnings progression	.40*	35	.22	31	.32*	47
Job relatedness	.60*	41	.49*	45	.55*	58
Job satisfaction	.13	41	.28*	45	.32*	58
Job stability	.13	41	.23	44	.05	58
Job mobility	-.06	35	-.05	35	.35*	56
Initial earnings	.46*	39	.60*	41	.50*	56
Present earnings	.52*	40	.70*	43	.65*	60
Non-Occupational Measures						
College education index	.60*	44	.56*	50	.65*	68
Non-college education index	-.12	40	.08	46	.33*	63
Conversational interests * * . . .	.28*	87	.20*	87	.41*	100
Leisure activities * *	.20*	87	.18	87	.32*	100
Organization affiliation	.35*	42	.41*	49	.37*	67
Attitude toward high school	.66*	40	.46*	45	.58*	59
Acknowledged high school learning .	.52*	38	.18	35	.31*	47
Ordinal day return	.54*	44	.49*	49	.44*	68

* Significant at 5 percent or better level of confidence

* * Based on all school means

Four of the occupational measures yielded significant stability coefficients for all three intercorrelations. They are related placement, job relatedness, initial earnings, and present earnings. Three others yielded significant stability for two of the three intercorrelations. They are general placement, earnings progression, and job satisfaction. The conclusion is that an appreciable degree of stability in school mean differences has been demonstrated for these measures. Two measures, employment security and job mobility, yielded only one significant stability coefficient, and one, job stability, yielded more.

Of the non-occupational measures, five yielded three significant stability coefficients (college education, conversational interests, organization affiliation, attitude toward former high school, and ordinal day of questionnaire return); two gave two significant stability coefficients (leisure activities and acknowledged high school learning); and one gave only one significant stability coefficient, (non-college education).

The stability coefficients in Table 36 indicate there is an appreciable degree of stability in the differences between schools for most measures over a five to ten year period. Some schools apparently do consistently better than others in terms of general placement, related placement and other measures for which significant stability coefficients were demonstrated. This leads to the question of why. What are the school, student, or community variables which are related to the occupational and non-occupational measures? A separate report will deal with this question. Later chapters in this report will be concerned with whether such basic variables as type of school, size of school enrollment, race of graduate, year of graduation and type of graduate are related to the derived measures. It should be expected that those measures for which no significant reliability estimates were established, i.e. job stability and earnings progression, will be unrelated to the aforementioned basic variables.

DERIVED MEASURE INTERCORRELATIONS

Introduction

Certain of the derived measures are readily interpreted in terms of what is desirable. There is little question, for example, about the desirability of maximum employment security. Similarly, measures like general placement, i.e. time required to obtain the first full-time job, and earnings progression, i.e. rate of increase in hourly earnings, have a face validity which also makes the interpretation of what is desirable a simple matter. Not all of the measures are so clear-cut. For example, vocational educators would generally agree that it is desirable to place graduates into the trade studied or a highly related trade. Would they agree as readily if it were shown that those who did not enter the trade or an allied trade had greater employment security, better earnings progression, and greater personal satisfaction with their work? The likelihood is that there would be considerable disagreement about the desirability of placement in the trade, taken from the standpoint of the graduate's good, if such relationships existed.

The assessment of the occupational and non-occupational measures as potential evaluative yardsticks requires a knowledge of their interrelationships. It is in the nature of their relationships with other measures that some measures will derive support for their use as evaluative tools. For that reason, derived measure intercorrelations were obtained.

Occupational Measure Intercorrelations

The method used for obtaining estimates of the occupational measure intercorrelations was as follows: For each school, a school mean was calculated for each measure for each year of graduation group. Thus, for each school there were three school means for each measure. In effect, the procedure scored schools in terms of how their graduates performed on the occupational measures. For example, if a school's 1958 graduates took a mean of 4.5 months to obtain their first full-time job, the school's general placement performance score was 4.5. *

The intercorrelation estimates were obtained by the Pearson product-moment correlation method. Thus, for each potential relationship, there were three correlation coefficients, one for each year of graduation group.

The correlation coefficients obtained are shown in Table 37. Those that are significant at the five percent or better level of confidence are marked with an asterisk. The interpretation of the coefficients posed a problem. For a given potential relationship, how many coefficients would have to be statistically significant to warrant the conclusion that the two variables were related? The following arbitrary standard was applied: If none of the three coefficients were statistically significant, the conclusion was that the variables were unrelated. If only one of the three coefficients was significant, the conclusion was that a relationship was possible, but not convincingly established. The magnitude of the correlation was also considered. If two or all three of the coefficients were significant and of like sign, the conclusion was that a relationship had been established.

It should be pointed out that the above interpretation standard ignores the possibility of relationships that may shift from a positive sign for the 1953 graduates to a negative sign for the 1962 graduates, or the converse. It also ignores that possiblity that a relationship might exist between two variables for one year of graduation group, but not for another. Thus, it runs the risk of rejecting relationships. However, that is no problem for the researcher who reads this report. He can always draw his own conclusions from the data.

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* The initial method planned called for correlating within each year of graduation group the individual graduate scores on the measures. The computer program for obtaining such intercorrelations from taped data was inadvertantly destroyed by a computer technician. The computation center had neither a spare program nor a written record of the program. Efforts to reconstruct the program proved to be too slow, so the decision was made to use the intercorrelation analysis method described above.

Table 37. INTERCORRELATIONS OF OCCUPATIONAL MEASURE SCHOOL MEANS FOR EACH YEAR OF GRADUATION GROUP (VOCATIONAL GRADUATES ONLY)

Derived Measure Correlations Based On School Means	Year of Graduation	OCCUPATIONAL MEASURES									
		1 General Placement	2 Related Placement	3 Employment Security	4 Earnings Progression	5 Job Relatedness	6 Job Satisfaction	7 Job Stability	8 Job Mobility	9 Initial Earnings	10 Present Earnings
1 General placement	1962	-	-.60*	-.70*	-.16	-.35*	-.24*	-.07	.01	-.17	-.39*
	1958	-	-.37*	-.63*	.00	.28*	.14	.06	-.02	-.11	-.18
	1953	-	-.56*	-.37*	.04	-.37*	.02	-.02	.33*	-.09	.22*
2 Related placement	1962	100	-	.56*	.17	.74*	.43*	.24*	-.01	.08	.30*
	1958	100	-	.45*	.05	.60*	.35*	.05	.22	.07	.37*
	1953	86	-	.30*	-.02	.80*	.28*	-.02	-.14	.03	.29*
3 Employment security	1962	100	100	-	-.05	.48*	.34*	.46*	-.11	.07	.28*
	1958	100	100	-	-.09	.01	.04	.05	.02	.00	.38*
	1953	87	86	-	-.02	.30*	.04	.23*	-.07	-.10	.25*
4 Earnings progression	1962	100	100	100	-	-.03	.02	-.32*	.25*	-.06	.38*
	1958	100	100	100	-	.10	.25*	-.17	.07	.05	.35*
	1953	85	84	89	-	.01	.10	-.06	.07	-.09	.22*
5 Job relatedness	1962	100	100	100	100	-	.62*	.45*	-.03	.16	.25*
	1958	100	100	100	100	-	.51*	.19*	.27*	.02	.33*
	1953	87	86	91	89	-	.33*	-.07	-.11	.00	.25*
6 Job satisfaction	1962	100	100	100	100	100	-	.41*	.05	.29*	.29*
	1958	100	100	100	100	100	-	.16	.08	.18	.37*
	1953	87	86	91	89	91	-	.17	-.19	-.04	.07
7 Job stability	1962	100	100	100	100	100	100	-	.02	.17	.11
	1958	100	100	100	100	100	100	-	-.21*	.10	.14
	1953	87	86	91	89	91	91	-	-.14	-.06	.24
8 Job mobility	1962	100	100	100	100	100	100	100	-	-.12	-.05
	1958	100	100	100	100	100	100	100	-	-.14	.04
	1953	84	83	87	87	87	87	87	-	.01	.06
9 Initial earnings	1962	100	100	100	100	100	100	100	100	-	.74*
	1958	100	100	100	100	100	100	100	100	-	.53*
	1953	86	85	90	89	90	90	90	87	-	.32*
10 Present earnings	1962	100	100	100	100	100	100	100	100	100	-
	1958	100	100	100	100	100	100	100	100	100	-
	1953	86	85	90	89	90	90	90	87	90	-

Significant at 5 percent or better level of confidence

With that background, the sets of correlation coefficients are selectively commented upon below:

1. General placement - related placement (1-2). The correlations are -.60, -.37 and -.56 respectively for 1962, 1958 and 1953 graduates, indicating a substantial inverse relationship. The relationship is the result of the two measures having in common the element of time required to get the first full-time job, and the inverse relationship implied by the equations, i.e. a low score on general placement corresponds in the direction of what is desirable to a high score on the related placement measure.

2. General placement - employment security (1-3). The correlations are -.70, -.63 and -.37 for the 1962, 1958 and 1953 graduates respectively. The substantial inverse relationships are because time required to obtain the first job is also a contributor to the total unemployment time that is reflected by the security measure. The higher the general placement score, the lower necessarily is the employment security score. The influence of the former on the latter is greatest for the 1962 graduates and least for the 1953 graduates. Hence, the trend in the magnitude of the correlations.

3. General placement - job relatedness (1-5). The correlations are -.35, .28 and -.37 for the 1962, 1958 and 1953 graduates respectively. The conclusion is that an inverse relationship exists, i.e. schools that have lower mean general placement scores, meaning relatively more prompt placement of graduates, tend to have higher mean job relatedness scores, meaning their graduates spend relatively more of their total employed time in the trades for which trained. The contradicatory correlation for the 1958 graduates is attributable, perhaps, to the influence of a recession year. It was more difficult to get any job much less a job in the trade. The strongly trade-minded graduates simply looked longer until they found a job in the trade or a highly related trade. Unlike in normal years, those who got

jobs promptly tended not to get them in the trade for which trained or highly related trades.

4. Related placement - employment security (2-3). The correlations are .56, .45 and .30, all significant, for the 1962, 1958 and 1953 graduates respectively. A substantial positive relationship exists, i.e. schools that have higher mean related placement scores tend to have higher mean employment security scores. The interpretation for the graduate is, those who are placed promptly in the trade or a highly related trade tend to have a higher employment security. The relationship is attributable in part to the common element of time required to get the first job which enters both equations, and in part to the greater employment security experienced by those who go into the trade or highly related trades.

5. Related placement - job relatedness (2-5). The correlations are .74, .60 and .80 for the graduates of 1962, 1958 and 1953 respectively. The two variables are highly related, i.e. schools that have higher mean related placement scores tend to have higher mean job relatedness scores. Stated another way, graduates who are placed promptly into the trade or highly related trades tend to stay with the trade or highly related trades. Conversely, those who are placed in unrelated trades tend to stay in unrelated trades. Thus, the first job is a harbinger of things to come.

6. Related placement - job satisfaction (2-6). The correlations are .43, .35 and .28, all significant, for the graduates of 1962, 1958 and 1953 respectively. The two variables are moderately related, i.e. schools that have higher mean related placement scores tend to have higher mean job satisfaction scores. Stated in terms of the graduates, those who are placed promptly in the trade or highly related trade, report greater job satisfaction over all jobs held during their period of employable time. Since we already know that those who are placed in the trade or highly related trades

7. Related placement - present earnings (2-10). The correlations are .30, .37 and .29, all significant, for graduates of 1962, 1958 and 1953 respectively. Thus, the two variables are moderately related, i.e. schools that have higher mean related placement scores tend to have higher mean present earnings scores. Stated in terms of the graduates, those who are placed promptly in the trades or highly related trades tend to have at the end of two, six, or eleven years, depending upon the year of graduation, higher earnings. It is interesting to note that the measure is unrelated to initial earnings. Those entering the trade or a highly related trade do not earn more initially than those who enter unrelated trades, but as a group then end up with more.

8. Employment security - job relatedness (3-5). The correlations are .48, .01, and .30 for the graduates of 1962, 1958 and 1953 respectively. The first and third coefficient are significant, indicating the two variables are moderately related, i.e. schools that have higher mean job relatedness scores tend to have higher mean employment security scores. Thus, graduates who entered the trade studied or highly related trades tend to have greater employment security. The relationship was deduced from other correlations, and is directly confirmed. The lack of a significant relationship for the 1958 graduates is explainable. They graduated in a recession year. Those who found jobs in the trade did so by looking longer, thus accumulating considerable unemployment before, not after their first job. This reduced their employment security scores, and eliminated the relationship for the six year period covered by the correlation.

9. Employment security - job stability (3-7). The coefficients are .46, .05 and .23 for 1962, 1958 and 1953 graduates respectively. The first and third correlation coefficients are significant, indicating the two variables are related, i.e. schools having

higher mean job stability scores tend to have higher mean employment security scores. The relationship is simple to understand. The fewer employers the graduate has had over his period of employable time, the greater his employment security. Many graduates apparently have periods of unemployment between jobs. The recession year graduates of 1958 did not yield a significant coefficient, indicating the relationship does not hold for this group. It could be that these graduates, having had difficulty getting their first job, were less inclined to terminate a job before they had another job lined up.

10. Employment security - present earnings (3-10). The correlations are .28, .38 and .25, all significant, for the graduates of 1962, 1958 and 1953 respectively. Thus, the two variables are slightly related, i.e. schools having higher mean employment security scores tend to have higher mean present earnings scores. Thus, graduates who have had higher employment security over their employable time period tended to have higher earnings at the time of the survey. Since employer stability relates to employment security (3-7), the interpretation is that those who have higher employer stability have higher employment security and end up with higher earnings. Jumping from employer to employer does not augur well for either employment security or rate of earnings among vocational graduates.

11. Earnings progression - present earnings (4-10). The correlations are .38, .35, and .22, all significant, for the graduates of 1962, 1958 and 1953 respectively. The two variables are clearly related. However, the relationship is attributable to the inclusion of rate of present earnings into the calculation of earnings progression. No significance is attached to the relationship.

12. Job relatedness - job satisfaction (5-6). The correlations are .62, .51 and .33, all significant, for the 1962, 1958 and 1953 graduates respectively. The two variables are definitely related,

although the relationship decreases with years out of school. Schools having higher mean job relatedness scores tend to have higher mean job satisfaction scores. In terms of the graduate, the interpretation is that those with the greatest amount of employed time in the trade or a highly related trade tend to report the greatest amount of personal satisfaction with their work. The relationship was deduced from other correlations (2-5 and 2-6), and is here directly confirmed. Stated generally, it appears that those who do work highly related to the trade studied in high school experience greater job satisfaction over many years than those who work in unrelated trades or occupations.

13. Job relatedness - job stability (5-7). The correlations are .45, .19 and -.07 for 1962, 1958 and 1953 graduates respectively. The first two correlations are significant. The two variables appear to be related for a given period of years, after which the relationship disappears. Within the period for which the relationship holds, schools having higher mean job relatedness scores tend to have higher mean job stability scores. Thus, the graduates who have the greatest amount of their employed time in the trade or a highly related trade also tend to have the greatest amount of employment stability.

14. Job relatedness - present earnings (5-10). The correlations are .25, .33 and .25, all significant, for 1962, 1958 and 1953 respectively. The two variables are slightly related, i.e. schools having higher mean job relatedness scores tend to have higher mean present earnings scores. Thus, graduates who have spent the greatest amount of their employed time in the trade or a highly related trade tend to have higher earnings after two, six and eleven years, depending upon year of graduation, than those who have worked in completely unrelated trades.

15. Job satisfaction - present earnings (6-10). The correlations are .29, .37, and .07 for the 1962, 1958 and 1953 graduates respectively.

The first two are significant, indicating a low-level relationship does exist. Thus, graduates who reported higher present earnings, relative to others, also reported greater job satisfaction. It cannot be said that the former determines the latter; they do tend to go together.

16. Initial earnings - present earnings (9-10). The correlations are .74, .53 and .32, all significant, for the 1962, 1958 and 1953 graduates respectively. The relationship indicates that the higher the initial earnings on the first job after graduation, the higher will be the present earnings two, six and eleven years after graduation. The relationship reflects the differential starting and future earnings among the trades.

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The lack of significant relationships among some measures also warrants comment. Earnings progression, for example, shows no convincing relationship with any other measure, with the exception of present earnings. Thus, rate of earnings increase is unrelated to placement in the trade, satisfaction with work, job mobility or job stability. Similarly, job mobility is unrelated to any other measure. Those who move to new cities to find jobs or better jobs have no better employment security, related placement, job relatedness, present earnings, or job satisfaction than those who make no such moves. That does not argue well for indiscriminate mobility among vocational graduates.

Non-occupational Measure Intercorrelations

The method used for obtaining intercorrelations among the non-occupational measures was the same as described for the occupational measures. Table 38 presents the intercorrelation coefficients in sets of three, one for each year of graduation group. Those significant at the five percent or better level of confidence are marked with an asterisk. The same standards of interpretation were applied as described for the occupational measures. Based on those standards, the following relationships were considered established:

Table 38. INTERCORRELATIONS OF NON-OCCUPATIONAL MEASURE SCHOOL MEANS FOR EACH YEAR OF GRADUATION GROUP (VOCATIONAL GRADUATES ONLY)

Derived Measure Correlations Based On School Means		Year of Graduation	NON-OCCUPATIONAL MEASURES							
			1	2	3	4	5	6	7	8
			College Education	Non-college Education	Conversation Interests	Leisure Activities	Organization Affiliation	High School Attitude	Claimed H. S. Learning	Ordinal Day of Return
1	College education	1962	–	-.05	.02	.13	.06	-.03	.14	.05
		1958	–	-.15	.10	.09	.26*	.09	.04	.14
		1953	–	-.12	.28*	.46*	.27*	.18	.03	.12
2	Non-college education	1962	100	–	-.04	-.03	.18	-.10	-.02	.08
		1958	100	–	.14	.22*	-.00	-.03	-.14	-.12
		1953	90	–	-.16	-.31*	.22*	.03	.15	.12
3	Conversation interests	1962	100	100	–	.64*	.54*	.01	.32*	-.03
		1958	100	100	–	.61*	.45*	.28*	.15	.13
		1953	90	89	–	.45*	.11	-.02	.06	.09
4	Leisure activities	1962	100	100	100	–	.52	.03	.16	-.03
		1958	100	100	100	–	.44*	.27*	.13	.17
		1953	91	90	90	–	.30*	.31*	.21*	.02
5	Organization affiliation	1962	100	100	100	100	–	-.06	.17	-.26
		1958	100	100	100	100	–	.24*	-.03	.02
		1953	91	90	90	91	–	.26*	.03	-.00
6	High school attitude	1962	100	100	100	100	100	–	.17	-.19
		1958	100	100	100	100	100	–	.20*	-.02
		1953	91	90	90	91	91	–	.19	.05
7	Claimed H. S. learning	1962	100	100	100	100	100	100	–	-.16
		1958	100	100	100	100	100	100	–	-.13
		1953	89	88	88	89	89	89	–	-.16
8	Ordinal day of return	1962	98	98	98	98	98	98	98	–
		1958	98	98	98	98	98	98	98	–
		1953	89	88	88	89	89	89	88	–

* Significant at 5 percent or better level of confidence

1. College education index - organization affiliation (1-5). The correlations are .06, .26 and .27 respectively for 1962, 1958 and 1953 graduates, the latter two coefficients being significant. The conclusion is that the two variables are related, i.e. schools that have greater mean college education index scores tend to have higher mean organization affiliation scores. The interpretation in terms of the graduate is, the more college education accumulated, the more he is likely to be a participant in community and other organizations. The correlations indicate a low-level relationship.

2. Conversational interests - leisure activities (3-4). The coefficients are .64, .61 and .45 for the graduates of 1962, 1958 and 1953 respectively. The two variables are significantly and substantially related, i.e. schools with higher mean conversational interest scores tend to have higher mean leisure activity scores. Apparently, the greater the graduate's active range of conversational interests, the greater his active range of leisure activities.

3. Conversational interests - organization affiliation (3-5). The coefficients are .54, .45 and .11 for 1962, 1958 and 1953 graduates respectively, the first two being significant. The two variables are related, i.e. schools with higher mean conversational interest scores tend to have higher mean organization affiliation scores. The interpretation in terms of the graduate is, the greater his active range of conversational topics, the greater his active involvement in community organizations.

4. Leisure activities - organization affiliation (4-5). The correlation coefficients are .52, .44 and .30, all significant, for the graduates of 1962, 1958 and 1953 respectively. The two variables are moderately related, i.e. schools with higher mean leisure activity scores tend to have higher mean organization affiliation scores. The interpretation in terms of the individual graduate is, the greater his active range of leisure activities, the

more active is he likely to be as a participant in community and other organizations.

5. Leisure activities - high school attitude (4-6). The coefficients are .03, .27 and .31 respectively for the graduates of 1962, 1958 and 1953. The last two correlations are significant at the five percent or better level of confidence. The conclusion is that the two variables are related, i.e. schools with higher mean leisure activity scores tend to have higher mean attitude-toward-former-school scores. Apparently, the greater the graduate's active range of leisure activities, the more favorable is his overall attitude toward his former high school.

6. Organization affiliation - high school attitude (5-6). The coefficients are .06, .24 and .26 respectively for the graduates of 1962, 1958 and 1953. The two variables are slightly but significantly related, i.e. schools with higher mean organization affiliation scores tend to have higher mean attitude-toward-former-school scores. Thus, graduates who report greater membership and active participation in community organizations also tend to have a more favorable overall attitude toward their former high school.

The above relationships do not imply a cause-effect relationship. They are the result of common factors, such as interests and motivations, which underlie the behaviors that are correlated.

The lack of relationships between some of the variables is also of interest. The non-college education index, for example, is unrelated to any other measure by the interpretation standard adopted. Similarly, acknowledged high school learning is unrelated to any other measure, including attitude-toward-former-high school. Most interesting is the lack of relationship between amount of college education and such measures as active range of conversational interests and leisure activities. The range restriction of the college education measure is undoubtedly a responsible factor. A very small minority of vocational graduates completes a college education.

Occupational and Non-occupational Measure Correlations

The method used for obtaining correlations between occupational and non-occupational measures was the same as that described earlier. Table 38-A presents the correlation coefficients in sets of three, one for each year of graduation group. Those significant at the five percent or better level of confidence are marked with an asterisk. The same standards for interpretation were applied as were described earlier in this section. Based upon those standards, the following relationships were considered established:

1. Related placement - acknowledged high school learning (1-7). The coefficients are .37, .30 and .29, all significant, for the graduates of 1962, 1958 and 1953 respectively. Thus, schools that have higher mean related placement scores also tend to have higher mean acknowledged high school learning scores. Apparently, graduates who have high related placement scores tend to acknowledge more learning of trade skills in high school.

2. Employment security - leisure activities (3-4). The correlations are -.24, -.24 and -.03 respectively for the graduates of 1962, 1958 and 1953. The first two coefficients are significant, thus, establishing an inverse relationship between the variables, i.e. schools with higher mean employment security scores tend to have lower mean leisure activity scores. Why this is so is not clear. Possibly those with more unemployment periods have been more active in the leisure activities listed on the questionnaire.

3. Employment security - ordinal day of return (3-8). The coefficients are -.23, -.23 and -.08 respectively for the graduates of 1962, 1958 and 1953. The first two coefficients are significant, thus, establishing an inverse relationship between the variables, i.e. schools with higher mean employment security scores tend to

Table 38-A. CORRELATIONS BETWEEN OCCUPATIONAL AND NON-OCCUPATIONAL MEASURE SCHOOL MEANS FOR EACH YEAR OF GRADUATION GROUP (VOCATIONAL GRADUATES ONLY)

Non-occupational Measures / Occupational Measures		Year of Graduation	1	2	3	4	5	6	7	8
			College Education	Non-college Education	Conversation Interests	Leisure Activities	Organization Affiliation	High School Attitude	Claimed H. S. Learning	Ordinal Day of Return
1	General placement	1962	.10	.02	.09	.16	.19*	.06	-.49*	-.00
		1958	-.10	-.19*	-.20*	-.45*	-.26*	-.01	-.07	-.04
		1953	.31*	-.11	.06	.30	-.04	.06	-.05	-.05
2	Related placement	1962	-.16	-.06	-.27*	-.23*	-.04	.09	.37*	-.24*
		1958	.09	.06	-.05	-.04	-.02	.14	.30*	-.10
		1953	-.35*	.16	-.09	-.19	-.06	.00	.29*	-.20
3	Employment security	1962	-.19*	.01	-.13	-.24*	-.12	.04	.34*	-.23*
		1958	-.06	.04	.15	-.24*	.33*	.18	.14	-.23*
		1953	-.16	.06	-.25*	-.05	-.03	.06	.07	-.08
4	Earnings progression	1962	.22*	-.00	-.04	-.04*	.08	-.03	.09	.19*
		1958	.03	-.04	-.23*	-.38*	-.05	-.41*	-.22*	.17
		1953	.02*	.27*	-.07	-.25*	.00*	.14*	-.02	.13
5	Job relatedness	1962	-.21*	.07	-.08	-.11	.07	.14	.37*	-.35*
		1958	-.06	-.05	-.28*	-.37*	-.10	.03	.28*	-.20*
		1953	-.21*	.19	-.18	-.06	-.00	.10	.39*	-.25*
6	Job satisfaction	1962	-.16	.14	-.16	-.22*	.03	.28*	.25*	-.28*
		1958	-.07	-.07	-.23*	-.19*	-.00	-.07	.12	.00
		1953	.09	-.04	.12	.33*	.19	.36*	.30*	.06
7	Job stability	1962	-.26*	.08	-.06	-.18	-.01	.14	.02	-.22*
		1958	-.16	-.04	-.09	-.00	.04	.13	-.06	.25*
		1953	-.27*	-.09	.05	-.05	.17	.11	-.25*	-.18
8	Job mobility	1962	-.06	-.09	-.01	-.12	-.17	.15	.03	.27*
		1958	.15	-.08	.08	-.14	.03	.03	.24*	-.11
		1953	-.18	.06	-.08	.08	.14	.12	.07	.02
9	Initial earnings	1962	.09	.10	-.14	-.17	.07	.05	.02	-.13
		1958	.29*	.11	-.14	.07	.12	.02	-.16	.11
		1953	.29*	-.01	.30*	.31*	.05	-.12	.05	.27*
10	Present earnings	1962	.22*	.08	-.13	-.22*	.08	-.03	.16	-.07
		1958	.22*	.00	-.20*	-.14	.13	-.18	-.04	.07
		1953	-.10	.20	-.03	.02	.23*	.18	.09	.00

* Significant at 5 percent or better level of confidence

have lower mean ordinal day of questionnaire return scores. Apparently, graduates with relatively high employment security were quicker to return their questionnaire than those with low employment security scores. While the relationships are of low-level, they do suggest that those who did not return a questionnaire may as a group have less employment security than those who did.

4. Earnings progression - leisure activities (4-4). The coefficients are -.27, -.24 and -.02 respectively for the graduates of 1962, 1958 and 1953. The first two coefficients are significant, thereby, establishing an inverse relationship between the two variables, i.e. schools with higher mean leisure activity scores tend to have lower earnings progression scores. Graduates with high leisure activity scores tend to report lower earnings progression scores. The reason for the inverse relationship is not clear. Perhaps, in some way, a wide range of active leisure activities is incompatible with higher rates of earnings progression.

5. Job relatedness - college education index (5-1). The correlations are -.21, -.06 and -.21 for 1962, 1958 and 1953 graduates respectively. The first and last coefficients are significant, thereby, establishing an inverse relationship between the two variables, i.e. schools with higher mean college education scores tend to have lower mean job relatedness scores. The greater the amount of post-high school college education, the less likely is the graduate to work in the trade studied in high school. The relationship stands to reason. It would be higher undoubtedly if more of the graduates had attended and completed a college education.

6. Job relatedness - acknowledged high school learning (5-7). The correlations are .37, .28 and .39, all significant, for the graduates of 1962, 1958 and 1953 respectively. The two variables

are related, i.e. schools with higher mean job relatedness scores tend to have higher mean acknowledged high school learning scores. The interpretation in terms of the graduate is, the more his jobs have been related to the trade studied in high school, the more he credits his former school with providing him with the trade skills required by his present job.

7. Job relatedness - ordinal day of return (5-8). The coefficients are -.35, -.20 and -.25, all significant, for the graduates of 1962, 1958 and 1953 respectively, thereby, establishing an inverse relationship between the two variables. Schools having high mean scores tend to have lower mean ordinal day of return scores. The relationship suggests that those who did not return questionnaires may have a lower job relatedness score as a group than those who did. The correlations indicate it may be worthwhile to correct the study sample for non-respondence.

8. Job satisfaction - leisure activities (6-4). The coefficients are -.22, -.19 and .33, all significant, for the graduates of 1962, 1958 and 1953. The lack of consistency in the sign of the three coefficients makes an interpretation difficult. The two negative correlations mean that schools with higher mean job satisfaction scores tend to have lower mean leisure activity scores, i.e. the higher the graduate's job satisfaction, the lower his range of active leisure activities. The relationship is contradicted by the positive correlation for 1953 graduates. It is possible that the nature of the relationship could change with increased years out of school.

9. Job satisfaction - high school attitude (6-6). The correlations are .25, -.01, and .36 respectively for 1962, 1958 and 1953 graduates. The first and last coefficients are significant. The conclusion is that the two variables are related, i.e. schools with higher mean job satisfaction scores tend to have higher mean attitude-toward-former-school scores. Thus, the greater the graduate's

reported job satisfaction, the more favorable is his overall attitude toward his former high school.

10. Job satisfaction - acknowledged high school learning (6-7). The correlations are .25, .12 and .30 respectively for the graduates of 1962, 1958 and 1953. The first and last coefficients are significant, thereby, establishing the relationship between the two variables. Schools with higher mean job satisfaction scores tend to have higher mean acknowledged learning scores, i.e. the graduates with higher reported job satisfaction tended to give more credit to their high schools for their trade skill learning.

11. Job stability - college education index (7-1). The coefficients are -.26, -.16 and -.27 respectively for the graduates of 1962, 1958 and 1953. The first and last coefficients are significant, thereby, establishing an inverse relationship between the two variables. Schools with higher mean college education index scores tend to have lower mean job stability scores. The implication is that graduates with more college education have a smaller average time per employer than those with little or no college education. The relationship makes sense when one realizes that those who attend college often do so part-time, and change their jobs upon completion. They also are more inclined to change employers because of greater employment opportunity.

12. Initial earnings - college education index (9-1). The coefficients are .09, .29 and .29 respectively for the 1962, 1958 and 1953 graduates. The last two coefficients are significant, thereby, establishing the not-unexpected relationship between the two variables. Schools with higher mean college education index scores tend to have higher mean initial earnings scores. Stated another way, the more college education the vocational graduate has accumulated, the higher his first full-time job initial earnings. The low correlations are attributable to the many graduates who have had their first full-time job before they have started or completed college.

13. Present earnings - college education index (10-1). The correlation coefficients are .22, .22 and -.10 for 1962, 1958 and 1953 graduates respectively. The significance of the first two coefficients establishes the not-unexpected relationship between the two variables. Schools with higher mean college education index scores tend to have higher mean present earnings scores. Interpreted in terms of the graduates, the relationship indicates the greater the amount of college education, the higher present earnings.

Thus, of a possible eighty relationships between occupational and non-occupational measures, only thirteen relationships were established. Only eight of these have a bearing on the use of non-occupational measures as evaluative tools. And four of the latter are inverse relationships with occupational measures of clear-cut merit, i.e. employment security, earnings progression, job relatedness and job satisfaction. It is clear that the non-occupational measures, excluding ordinal day of questionnaire return which was never intended as a potential evaluative tool, will have to stand on their own merits as potential measures for evaluating vocational education. Some, such as post-high school college level education, are incompatible with occupational measures now established as useful for evaluation purposes, i.e. related placement performance and job relatedness. The incompatibility should not be overlooked by educators who are inclined to stress both occupational and educational objectives.

4

FACTORS RELATED TO VOCATIONAL COURSE SELECTION

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CHAPTER 4 SUMMARY

Factors Influencing Course Selections

1. Sources of influence. The rank order of sources reported by graduates to have influenced the vocational course selected in high school is: (1) job opportunity (43%), (2) parents (28%), (3) friend of same age (22%), (4) books and magazines (17%), (5) school teachers (15%), and (6) school counselor (12%).

2. Year of graduation. The rank order of the top six sources of influence on course selection was essentially the same for 1953, 1958, and 1962 graduates. The influence of parents, friends, and part-time jobs on course selection is decreasing; while the influence of job opportunities, teachers, books and magazines, and counselors is increasing.

3. Placement in trade. Graduates who were influenced to select the course taken in high school by friends were less likely to work in the trade studied than those influenced by parents, teachers, or counselors.

4. Type of school. Graduates of vocational and comprehensive schools differ in terms of the percentages that acknowledge different sources of influence over high school course selection. Comprehensive high school graduates were more frequently influenced by friends, counselors and teachers; and less frequently influenced by parents and books and magazines.

5. Enrollment of school. Books and magazines, school counselors, part-time jobs and course graduates increase in frequency of acknowledged sources of course selection influence with increased school enrollment. The influence of teachers, friends, and principals decreases with increased enrollment.

6. Race of graduate. Negro graduates acknowledge the influence of job opportunity, friends, books and magazines, teachers, and counselors more frequently than do white graduates. The latter acknowledge the influence of parents more than do Negro graduates. The latter seem to be less influenced by traditional family sources of influence; e.g., parents, relatives, siblings, and family friends.

7. Type of graduates. Academic graduates have a substantially different pattern of course selection influences than do vocational graduates. Parents and counselors seem to have been a much greater influence in those who selected an academic course than on those who selected a vocational course.

THE PROBLEM OF COURSE SELECTION

The problem of choosing a trade confronts all who elect the vocational program in high school. For many, the choice must be made quite early. Of the one hundred schools surveyed, nineteen had four-year vocational programs, forty-seven had three-year programs, and thirty-four had two year programs. Thus, most students must make their trade choice at the start or end of their first year in high school.

The problem of choosing a vocation is usually not an easy matter. For many, the choice is based upon a combination of little real knowledge of the chosen vocation, much misinformation and high hopes, and pressures from parents, relatives and others interested in influencing the choice. Understandably, the process of choosing a vocation can be a cause of conflict and concern to many students.

How well the student makes his trade choice may be the source of two problems that concern the vocational educator. One is the problem of the high school dropout, a problem no less severe among vocational course students than among academic students. The other is the problem of the large percentage of vocational course graduates who do not follow the trade studied in high school.

The student who comes to realize that the trade he has selected is not what he is suited for, whether for reasons of ability or interest, is under considerable pressure to continue in the course selected. Schools tend to discourage switching from one course to another. Many parents are inclined to do the same. Even where these pressures are not present, there may be a reluctance to change to another course because change means leaving old classmates, starting all over again, admitting defeat, or other deterrents. For many who realize they have made the wrong choice, there is no solution but to continue in the course chosen until they graduate. After that, they can always go into something else. So they may reason, and so many do. For others, the answer may be to drop out of school at the first opportunity. For them, it is too late to change and impossible to continue.

These possibilities point up the importance of the vocational course selection problem. Choices that are incompatible with interests, aptitudes and abilities may add to the school dropout problem or result in trade training that is never put to use. More needs to be known about how students are influenced to choose a trade in a vocational program.

The graduates surveyed were asked to consider a list of possible sources which may have influenced their choice of a specific vocational course, and mark all that did influence their choice. They were also asked to indicate the most important source of influence on their choice. This chapter is concerned with the analysis of their responses.

The data, it should be pointed out, are what graduates recall about how they were influenced to choose their vocational course. Recalled influences are not necessarily the real influences that operated at the time. Nevertheless, the correspondence between recalled and actual influences is probably substantial.

ANALYSIS BY GRADUATING CLASS

Rank Order of Influence Sources

The sources of influence on vocational course selection are shown ranked in Table 39 according to frequency of endorsement by the three graduating classes combined. The top six sources of influence are (1) job opportunity, (2) parents, (3) friends of the same age, (4) books and magazines, (5) school teachers, and (6) school counselors.

About 43 percent of the graduates checked job opportunity as a factor that influenced their course selection. This suggests considerable concern with getting a job after graduation. The job opportunity factor must be understood as the students perception of job opportunity, based on what information has come to him. It does not necessarily correspond to actual job opportunity. Nor does it correspond to what the job opportunity will be when he graduates. The dominance of this factor, however, does indicate a receptivity for trade career information, and a practical orientation.

Parents were the second most frequently acknowledged source of influence (28.6 percent). That parents would be a major source of influence is not unexpected. The percentage is significant also in what it tells about the absence of parental influence on so important a matter as career choice. More than 70 percent of the graduates, in effect, indicated their parents were not a source of influence.

Friends of the same age ranked third with 21.6 percent, only seven percent less frequently mentioned than parents. This points up once again the influence of peers on decisions by high school youth. Books and magazines were acknowledged as a source of influence by only 17.5 percent of the graduates. This may be because reading is not yet developed as a personal tool or because of lack of accessibility to relevant reading material.

The relatively small influence of school personnel is striking. Only 15.1 percent reported a school teacher as a source of influence. Counselors were reported as course selection influence by 12.3 percent of the graduates. Principals were acknowledged by 2.6 percent. The lack of reported influence by school personnel cannot be explained by lack of opportunity to provide guidance. In eighty-one of the one hundred schools surveyed, students had at least one year of high school before they were required to make a choice. Why school personnel have such little influence is a question worth asking. This research does not provide the answers.

Graduates were also instructed to indicate which one factor, of whatever number were acknowledged as having had some influence on their trade choice, was the most important influence. The results are shown in Table 40.

Table 39. CLASS YEAR COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES TO HAVE INFLUENCED TYPE OF VOCATIONAL COURSE SELECTED *

Sources of Influence in Course Selection	YEAR OF GRADUATION								
	1953		1958		1962		Combined		
	N	%	N	%	N	%	N	%	
Job opportunities	417	36.3	697	42.5	1167	47.2	2290	43.4	▲
Parents	328	28.6	440	26.8	732	29.6	1504	28.5	
Friend your age	242	21.1	333	20.3	561	22.7	1139	21.6	
Books and magazines . . .	159	13.9	256	15.6	508	20.6	923	17.5	▲
School teacher	143	12.5	232	14.2	422	17.1	799	15.1	▲
School counselor	90	7.8	175	10.7	381	15.4	649	12.3	▲
Relative	111	9.7	162	9.9	287	11.6	561	10.6	
Part-time job	131	11.4	153	9.3	243	9.8	529	10.0	
Brother or sister	86	7.5	133	8.1	201	8.1	421	8.0	
Course graduate	47	4.1	93	5.7	182	7.4	323	6.1	▲
Neighbor (adult)	53	4.6	70	4.3	116	4.7	240	4.5	
School principal	27	2.4	30	1.8	76	3.1	135	2.6	
Other than above	224	19.6	292	17.8	476	19.3	995	18.9	

* The arrowhead indicates the direction of a consistent trend.

The rank order of the factors designated as most important is essentially the same as the rank order obtained previously. The top six factors were: (1) job opportunity (26.8 percent), (2) parents (14.4 percent), (3) friend of same age (9.8 percent), (4) school teacher (6.3 percent), (5) school counselor (5.7 percent), and (6) books and magazines (4.5 percent). Only 13 percent of the graduates acknowledged school personnel as the "most important influence." What is not clear is the possible indirect influence of school personnel, i.e. discussing job opportunities, suggesting literature to be read, advising parents about career opportunities, and so on.

Table 40. CLASS YEAR COMPARISON: MOST IMPORTANT SOURCE OF INFLUENCE ON TYPE OF VOCATIONAL COURSE SELECTED AS RECALLED BY GRADUATES *

Most Important Influence in Course Selection	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Job opportunities	168	19.9	339	28.9	466	29.1	973	26.8 ▲
Parents	160	19.0	161	13.7	200	12.5	524	14.4 ▼
Friend your age	93	11.0	116	9.9	146	9.1	357	9.8 ▼
School teacher	43	5.1	80	6.8	104	6.5	227	6.3
School counselor	34	4.0	61	5.2	110	6.9	205	5.7 ▲
Books and magazines	31	3.7	44	3.7	88	5.5	163	4.5
Brother or sister	40	4.7	46	3.9	75	4.7	161	4.4
Relative	38	4.5	57	4.9	62	3.9	158	4.4
Part-time job	52	6.2	4	4.6	48	3.0	154	4.2 ▼
Course graduate	9	1.1	21	1.8	33	2.1	63	1.7 ▲
Neighbor (adult)	15	1.8	14	1.2	22	1.4	51	1.4
School principal	10	1.2	9	0.8	18	1.1	38	1.0
Other than above	150	17.8	172	14.7	231	29.1	554	15.3

* The arrowhead indicates the direction of a consistent trend.

What is clear is that relatively few graduates recall school personnel as having had a direct influence on their trade choice.

Tables 39 and 40 contain the category "other than above." Of the substantial percentage of graduates that checked this category, many wrote, in effect, that they regarded themselves as the main source of influence. Apparently, they interpreted the question as excluding the idea that they made the decision, and felt compelled to assert themselves. Others that checked this category mentioned such sources of influence as hobbies, ministers, friends of the family and childhood ambitions. The percentages were negligible for each of these kinds of miscellaneous influences.

Several interesting trends are revealed in Table 39. An arrow upward indicates a consistent increase in percentages reported from 1953 to 1962. An arrow downward indicates a consistent decrease in percentages reported. The influence of perceived job opportunity increased from 36.3 percent for the 1953 graduates to 42.5 percent for the 1958 graduates to 47.2 percent for the 1962 graduates, a total gain of 11 percent. This may be a reflection of an increasing awareness among high school youth of difficulty in finding jobs after high school. The increasing youth unemployment and underemployment has been well publicized in recent years. Schools have probably passed this information along to their students. The trend implies an increasing receptivity of students to information about job opportunity. It should be of interest to school personnel.

Another significant trend is the increasing influence of books and magazines, from 13.9 percent for 1953 graduates to 15.6 percent for 1958 graduates to 20.6 percent for 1962 graduates. The reasons for the increasing influence of reading matter would be interesting to establish. Perhaps the trend reflects a greater availability of guidance literature in the schools in recent years. Perhaps school personnel are more active in recommending reading material to aid career choice. Whatever the reasons, the trend should cause more importance to be attached to the kind of literature that is being read.

A third significant trend is the increasing influence of school personnel. The percentage acknowledging school teachers as a source of influence increased from 12.5 percent for 1953 graduates to 14.5 percent for 1958 graduates to 17.1 percent for 1962 graduates, a slow but steady gain. Similarly, the percentage acknowledging school counselors increased for the same groups from 7.8 percent to 10.7 percent to 15.4 percent.

Lastly, the influence of course graduates shows a slight but consistent increase from 4.1 percent for 1953 graduates to 7.4 percent for 1962 graduates.

The percentages acknowledging different factors as the most important source of influence confirm some of the above-mentioned trends, and also reveal some new ones. The role of parents, as a "most important source of influence" is declining, as evidenced by a drop from 19.0 percent for 1953 graduates to 12.5 percent for the 1962 graduates. The influence of friend of the same age is also declining. The drop was from 11.0 percent for 1953 graduates to 9.1 percent for 1962 graduates; the drop is more suggestive than impressive.

The trends in both tables suggest an overall pattern of decreasing influence of the traditional close sources of influence, i.e. parents, relatives, friends and part-time jobs, and increasing influence of more "authoritative" sources of information, i.e. job opportunity, teachers, counselors, reading matter, and even recent graduates.

Are the trends in the right direction? On the surface, it would appear so. The answer, however, is not a matter for opinion. It remains to be established whether the more "authoritative" sources of influence are more effective than the traditional sources. Do they result in less switching of courses, fewer dropouts, and more placement of graduates in the trade studied? The present study does not have the data for an adequate assessment of the trends. A probe was made in that direction to illustrate one approach. The question was raised, how do graduates who claim the parents as the most important source of influence on trade choice compare in terms of (1) related placement and (2) job relatedness with those who claimed teachers, counselors, and friends as the most important influence? The results are shown in Table 41.

The graduates who claimed their parents as the most important influence did just as well in terms of placement in the trade or a highly related trade and just as well in overall job relatedness of work to trade studied as those whose choice was mainly influenced by teachers. Both of these groups did better in related placement and job relatedness than the group influenced mainly by friends of the same age. The last group showed the poorest performance on the criterion measures. The majority of those influenced mainly by their peers went into jobs unrelated or slightly related to the trade studied.

Table 41. RELATED PLACEMENT AND JOB RELATEDNESS MEASURES FOR GRADUATES WHO REPORTED PARENTS, TEACHER, COUNSELOR, OR FRIENDS AS THE MOST IMPORTANT INFLUENCE ON TYPE OF VOCATIONAL COURSE SELECTED

Acknowledged As Most Important Influences	Year of Graduation	Related Placement			Job Relatedness		
		N	M	S.D.	N	M	S.D.
Parents	1953	123	48.2	30.6	123	2.3	1.0
	1958	118	40.2	29.0	121	2.3	1.0
	1962	132	48.8	33.0	133	2.4	1.2
	Combined	376	45.7	31.2	380	2.3	1.1
Teacher	1953	36	44.0	33.4	36	2.2	1.0
	1958	55	44.5	36.8	56	2.4	1.2
	1962	67	46.6	32.4	67	2.6	1.1
	Combined	158	45.3	34.2	159	2.4	1.1
Counselor	1953	28	51.5	33.1	29	2.4	1.0
	1958	41	35.1	31.5	41	2.4	1.1
	1962	54	34.8	26.9	54	2.1	1.2
	Combined	123	38.7	30.8	124	2.3	1.1
Friend your age	1953	67	38.5	31.7	67	2.0	1.0
	1958	81	27.2	27.6	81	2.0	1.0
	1962	118	34.3	28.0	118	2.0	1.1
	Combined	267	33.2	29.2	267	2.0	1.0

ANALYSIS BY TYPE OF SCHOOL

Do the sources of influence on course selection acknowledged by vocational school graduates differ significantly from those acknowledged by the comprehensive school vocational course graduates? If so, what are the differences? The questions have a bearing on the vocational versus comprehensive school issue.

Table 42 shows the data for all acknowledged sources of influence. In terms of rank order of the top six factors, there is no significant difference between the two types of schools. However, there are significant differences between schools in the percentages acknowledging some of the factors.

Table 42. TYPE OF SCHOOL COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES TO HAVE INFLUENCED TYPE OF VOCATIONAL COURSE SELECTED

Sources of Influence in Course Selection	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Job opportunities	1328	42.8	962	44.2
Parents	956	30.8	548	25.2
Friend your age	626	20.2	513	23.6
Books and magazines . . .	560	18.1	363	16.7
School teacher	420	13.5	379	17.4
School counselor	344	11.1	305	14.0
Relative	357	11.5	204	9.4
Part-time job	244	7.9	285	13.1
Brother or sister	222	7.2	199	9.1
Course graduate	142	4.6	181	8.3
Neighbor (adult)	149	4.8	91	4.2
School principal	98	3.2	37	1.7
Other than above	605	19.6	390	18.0

Greater percentages of comprehensive than vocational school graduates reported being influenced by friends of same age (23.6 percent vs. 20.2 percent), school teachers (17.4 percent vs. 13.5 percent), school counselors (14.0 percent vs. 11.1 percent), part-time jobs (13.1 percent vs. 7.9 percent), and recent course graduates (8.3 percent vs. 4.6 percent). More vocational course graduates reported being influenced by parents (30.8 percent vs. 25.2 percent), books and magazines (18.1 percent vs. 16.7 percent), and relative (11.5 percent vs. 9.4 percent).

Table 43 compares the two types of schools in terms of factors acknowledged to be the most important influence in course selection.

Table 43. TYPE OF SCHOOL COMPARISON: SOURCES REPORTED AS THE MOST IMPORTANT INFLUENCE ON VOCATIONAL COURSE SELECTED

Most Important Influence in Course Selection	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Job opportunities	564	26.0	409	28.0
Parents	365	16.8	159	10.9
Friend your age	202	9.3	155	10.6
School teacher	135	6.2	92	6.3
School counselor	101	4.7	104	7.1
Books and magazines	105	4.8	58	4.0
Brother or sister	89	4.1	72	4.9
Relative	105	4.8	53	3.6
Part-time job	71	3.3	83	5.7
Course graduate	26	1.2	37	2.5
Neighbor (adult)	38	1.8	13	0.9
School principal	26	1.2	12	0.8
Other than above	341	15.7	213	14.6

In terms of factors acknowleged as the most important source of influence, job opportunity was mentioned more frequently by comprehensive school graduates (28.0 percent vs. 26.0 percent), as was the school counselor (7.1 percent vs. 4.7 percent). Graduates of vocational schools acknowledged parents more frequently as a major source of influence (16.8 percent vs. 10.9 percent).

Notwithstanding the significant differences, the differences are minor compared with the similarities. The top six sources of influence rank the same in both types of schools.

ANALYSIS BY SCHOOL ENROLLMENT

Do the sources of influence on vocational course selection vary significantly with school enrollment? For example, do teachers have a greater influence on the student's selection of a course in a small school than in a large school?

Table 44 shows how graduates of schools in three enrollment categories, i.e. less than 500, between 500 and 1500, and more than 1500, reported the sources that influenced their vocational course choice. With a minor exception, the rank order of the top six sources of influence is the same in all enrollment categories.

Table 44. ENROLLMENT COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES TO HAVE INFLUENCED TYPE OF VOCATIONAL COURSE SELECTED *

Sources of Influence in Course Selection	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Job opportunities	748	43.1	847	42.2	695	45.1
Parents	508	29.2	572	26.8	424	27.5
Friend your age	360	20.7	449	22.5	330	21.4
Books and magazines . . .	270	15.5	366	18.3	287	18.6 ▲
School teacher	228	13.1	333	16.7	238	15.4
School counselor	179	10.3	233	11.7	237	15.4 ▲
Relative	184	10.6	228	11.4	149	9.7
Part-time job	161	9.3	203	10.2	165	10.7 ▲
Brother or sister	140	8.1	157	7.9	124	8.0
Course graduate	87	5.0	130	6.5	106	6.9 ▲
Neighbor (adult)	84	4.8	98	4.9	58	3.8
School principal	67	3.9	48	2.4	20	1.3 ▼
Other than above	309	17.8	379	19.0	307	20.0

* The arrowhead indicates the direction of a consistent trend.

Arrows point out the direction of the few consistent trends that exist. Books and magazines, school counselors, and course graduates increase in frequency of acknowledgment as a source of influence as school enrollment increases. The influence of the school principal declines as enrollment increases. The small school does not seem to have any advantage from the standpoint of teacher or counselor influence. On the contrary, the influence of teachers and counselors on vocational course selection is least in the small schools.

Table 45 shows the effect of school enrollment in terms of factors reported as the most important source of influence on type of course selected. Only two significant trends are indicated. The influence of parents, as the most important source of influence, declines as enrollment increases.

Table 45. ENROLLMENT COMPARISON: SOURCES REPORTED AS THE MOST IMPORTANT COURSE SELECTION INFLUENCE *

Most Important Influence in Course Selection	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Job opportunities	331	27.4	347	25.4	295	28.1
Parents	201	16.6	201	14.7	122	11.6 ▼
Friend your age	120	9.9	135	9.9	102	9.7
School teacher	74	6.1	99	7.2	54	5.1 ▼
School counselor	52	4.3	69	5.0	84	8.0 ▲
Books and magazines	50	4.1	64	4.7	49	4.7
Brother or sister	48	4.0	68	5.0	45	4.3
Relative	49	4.1	68	5.0	41	3.9
Part-time job	54	4.5	55	4.0	45	4.3
Course graduate	15	1.2	25	1.8	23	2.2
Neighbor (adult)	23	1.9	18	1.3	10	1.0
School principal	17	1.4	16	1.2	5	0.5 ▼
Other than above	175	14.5	203	14.8	176	16.7

* The arrowhead indicates the direction of a consistent trend.

This may be because the very large enrollment schools are usually located in major metropolitan areas, and the influence of parents in such areas may be less than in smaller urban areas. The influence of school counselors, as the most important source of influence, increases as enrollment increases. The latter trend may be a reflection of more counseling capability in larger schools. The influence of teachers shows a slight decrease in schools with enrollments greater than 1500.

ANALYSIS BY TYPE OF GRADUATE

Do academic course graduates report the same pattern of course selection influences as do vocational course graduates? If not, how do they differ? The answers may provide further insight into the reason why so many students reject a vocational course in favor of the academic course, yet do not go on to college.

Table 46 compares the course selection influence factors reported by both types of graduates. The differences are impressive. The basic rank order of importance reported by academic graduates differs substantially from the rank order found among vocational graduates.

Table 46. TYPE OF GRADUATE COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES TO HAVE INFLUENCED TYPE OF COURSE SELECTED

Sources of Influence in Course Selection	TYPE OF GRADUATE			
	Vocational		Academic	
	N	%	N	%
Job opportunities . . .	2290	43.4	654	37.6
Parents	1504	28.5	751	43.2
Friend your age	1139	21.6	379	21.8
Books and magazines . .	923	17.5	259	14.9
School teacher	799	15.1	413	23.7
School counselor . . .	649	12.3	539	31.0
Relative	561	10.6	146	8.4
Part-time job	529	10.0	88	5.1
Brother or sister . . .	421	8.0	221	12.7
Course graduate	323	6.1	104	6.0
Neighbor (adult) . . .	240	4.5	62	3.6
School principal . . .	135	2.6	54	3.1
Other than above . . .	995	18.9	267	15.4

For the two types of graduates, the rank orders of the six most frequently reported sources of influence are listed below:

VOCATIONAL	ACADEMIC
1. Job opportunity	1. Parents
2. Parents	2. Job opportunity
3. Friend same age	3. School counselor
4. Books and magazines	4. School teacher
5. School teacher	5. Friend same age
6. School counselor	6. Books and magazines

Whereas, 43.4 percent of the vocational graduates acknowledged job opportunity as a source of influence on the selection of their course, only 37.6 percent of the academic graduates did so. Parents were reported as a source of course selection influence by 28.5 percent of the vocational graduates versus 43.2 percent of the academic graduates. The percentages reporting friends of the same age as an influence were about the same. The major difference was the influence of school personnel. Counselors were reported as an influence by 12.3 percent of the vocationals versus 31.0 percent of academics. School teachers were reported as an influence by 15.1 percent of the vocationals versus 23.7 percent of the academics. The two types of graduates also differed significantly on the reported influence of books and magazines. More of the vocational graduates reported their course selection was influenced by books and magazines than did the academic graduates.

Table 47 shows how the two types of graduates acknowledged the factors as the "most important source of influence." Parents (24.8 percent), job opportunities (17.7 percent) and school counselors (16.1 percent) are the dominant pattern of influence in course selection for academic graduates. Parents, as the most important influence, are twice the factor for academics than for vocationals.

What does it mean from the standpoint of vocational education? It means that counselors and teachers, combined with parents, are a strong force for influencing students to select the academic course in comprehensive high schools. In the same schools, however, school personnel are a much less frequent source of influence when it comes to guiding would-be vocational students in the selection of their trade. This may be a reflection of a strong academic orientation of counselors and teachers in comprehensive schools.

Table 47. TYPE OF GRADUATE COMPARISON: SOURCES REPORTED AS THE MOST IMPORTANT COURSE SELECTION INFLUENCE

Most Important Influence in Course Selection	TYPE OF GRADUATE			
	Vocational		Academic	
	N	%	N	%
Job opportunities	973	26.8	217	17.7
Parents	524	14.4	303	24.8
Friend your age	357	9.8	92	7.5
School teacher	227	6.3	88	7.2
School counselor	205	5.7	197	16.1
Books and magazines	163	4.5	41	3.3
Brother or sister	161	4.4	51	4.2
Relative	158	4.4	26	2.1
Part-time job	154	4.2	27	2.2
Course graduate	63	1.7	18	1.5
Neighbor (adult)	51	1.4	7	0.6
School principal	38	1.0	3	0.2
Other than above	554	15.3	154	12.6

Table 48 shows the results of a special analysis which compares vocational with academic graduates from comprehensive high schools only. The data do not change any of the generalizations made earlier. If anything, parents are less of an influence on the course selection of vocational graduates from comprehensive schools than of vocational graduates from vocational schools.

Table 48. TYPE OF GRADUATE COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES FROM COMPREHENSIVE SCHOOLS TO HAVE INFLUENCED TYPE OF COURSE SELECTED

Sources of Influence in Course Selection	TYPE OF GRADUATE			
	Vocational		Academic	
	N	%	N	%
Job opportunities	962	44.2	654	37.6
Parents	548	25.2	751	43.2
Friend your age	513	23.6	379	21.8
Books and magazines . . .	363	16.7	259	14.9
School teacher	379	17.4	413	23.7
School counselor	305	14.0	539	31.0
Relative	204	9.4	146	8.4
Part-time job	285	13.1	88	5.1
Brother or sister	199	9.1	221	12.7
Course graduate	181	8.3	104	6.0
Neighbor (adult)	91	4.2	62	3.6
School principal	37	1.7	54	3.1
Other than above	390	14.0	267	15.4

ANALYSIS BY RACE OF GRADUATE

Do Negroes differ significantly from whites in terms of the sources of influence on the type of vocational course selected? If so, what are the differences? Significant differences should be of interest to school counselors who have the problem of guiding students of both races.

Table 49 shows the percentages of white and Negro graduates who reported each of the listed factors as an influence on the type of vocational course selected.

Table 49. RACE COMPARISON: SOURCES ACKNOWLEDGED BY GRADUATES TO HAVE INFLUENCED TYPE OF VOCATIONAL COURSE SELECTED

Sources of Influence in Course Selection	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
Job opportunities	2026	42.9	173	51.2	3	15.8
Parents	1391	28.9	77	22.8	3	15.8
Friend your age	1028	21.4	90	26.6	4	21.1
Books and magazines	815	17.0	93	27.5	1	5.3
School teacher	690	14.4	82	24.3	6	31.6
School counselor	576	12.0	55	16.3	3	15.8
Relative	520	10.8	25	7.4	2	10.5
Part-time job	486	10.1	35	10.4	1	5.3
Brother or sister	392	8.2	20	5.9	1	5.3
Course graduate	293	6.1	21	6.2	1	5.3
Neighbor (adult)	217	4.5	17	5.0	0	0.0
School principal	124	2.6	9	2.7	0	0.0
Other than above	921	19.2	45	13.4	5	26.4

There are both changes in the rank order of the top six factors and the percentages acknowledging each factor.

WHITE GRADUATES	NEGRO GRADUATES
1. Job opportunity (42.9%)	1. Job opportunity (51.2%)
2. Parents (28.9%)	2. Books and magazines (27.5%)
3. Friend your age (21.4%)	3. Friend your age (26.6%)
4. Books and magazines (17.0%)	4. School teacher (24.3%)
5. School teacher (14.4%)	5. Parents (22.8%)
6. School counselor (12.0%)	6. School counselor (16.3%)

The pattern differences are confirmed in Table 50 which shows how graduates of both races reported what were the most important influences on the type of vocational course selected.

These results suggest that the Negro is turning away from traditional family sources of influence, such as parents, relatives and siblings toward non-family sources of influence, such as teachers, counselors, books and magazines, friends, and above all, his interpretation of future job opportunity. Perhaps the Negro perceives non-family sources as more authoritative. In his strivings to improve his status in life, he may be unconsciously rejecting his family as a source of guidance in favor of more authoritative sources. That may be because the more highly motivated Negro is acutely aware of the discrepancy between what he wants to achieve and what his family has achieved. Consequently, he looks to non-family sources for guidance. Regardless of the interpretation of why, he does appear to be more readily influenced by non-family sources. This should be of interest to school teachers and counselors.

Table 50. RACE COMPARISON: SOURCES REPORTED BY GRADUATES AS THE MOST IMPORTANT INFLUENCE ON VOCATIONAL COURSE SELECTION

Most Important Influence in Course Selection	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
Job opportunities	879	26.2	68	36.4	2	11.1
Parents	496	14.8	15	8.0	2	11.1
Friend your age	327	9.8	24	12.8	1	5.6
School teacher	202	6.0	15	8.0	5	27.8
School counselor	189	5.6	13	7.0	1	5.6
Books and magazines	150	4.5	11	5.9	0	0.0
Brother or sister	153	4.6	5	2.7	1	5.6
Relative	145	4.3	7	3.7	1	5.6
Part-time job	143	4.3	8	4.3	1	5.6
Course graduate	61	1.8	1	0.5	0	0.0
Neighbor (adult)	48	1.4	2	1.1	0	0.0
School principal	36	1.1	1	0.5	0	0.0
Other than above	520	15.5	17	9.1	4	22.2

5

THE FIRST FULL-TIME POST GRADUATION JOB

☐ The Significance of the First Job 1

☐ Time Required to Get First Job 3

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☐ Reasons For Not Getting First Job in Trade 25

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CHAPTER 5 SUMMARY

Time Required to Get First Job

1. Year of graduation. The 1953, 1958, and 1962 graduates required respectively 1.3, 2.3, and 1.7 months to get their first job. Time required is related to general level of unemployment.

2. Type of school. Comprehensive school vocational graduates took slightly longer to get jobs than vocational school graduates.

3. Enrollment of school. Time to get first job is unrelated to enrollment of graduates' school.

4. Race of graduate. Negro graduates take about twice as long to get their first job as white graduates.

5. Type of program. Academic course graduates require on an average one month longer to find their first full-time job than vocational course graduates.

6. Regional differences. There are definite regional differences in time required to get the first job.

Relatedness of First Job to Trade Studied

7. Year of graduation. The percentage of graduates whose first job was in the same trade studied was 32.6, 27.6, and 29.6 per cent respectively for 1953, 1958, and 1962 graduates. The relatedness of first job to trade studied correlates inversely with the U.S. unemployment rate.

8. Type of school. Vocational schools have a consistently higher related job placement performance than comprehensive schools.

9. Enrollment of school. Related job placement performance is inversely related to school enrollment. Small enrollment schools do slightly better.

10. Race of graduate. Negro graduates are much less likely to find their first job in the trade for which trained or a highly related trade than white graduates.

11. Regional differences. There are definite regional differences in related job placement performance.

(Continued in Appendix B)

THE SIGNIFICANCE OF THE FIRST JOB

If the graduate's first job is not in the trade studied or a highly related trade, the chances are high that he will never enter the trade or a highly related trade. But, if his first job is in the trade or a highly related trade, the odds are great that he will stay with the trade or allied trade. Therein lies the significance of the first full-time job after graduation. The first job, as was pointed out in Chapter 3, is a harbinger of jobs to come.

The present chapter is concerned with the following basic questions about the first job:

1. How long does it take the graduate to get his first full-time job?
2. How is his first job related to the trade studied in high school?
3. To what extent do school and other sources help him find his first job?
4. If his first job is in the trade, what is his opinion of how well his trade education prepared him for the job?
5. If his first job is not in the trade studied, what reasons does he give?

These and related questions are explored in terms of basic variables, i.e. year of graduation, type of school, school enrollment, race of graduate, and where applicable, the type of graduate.

THE TIME REQUIRED TO GET THE FIRST JOB

Trend in General Placement

The general placement measure indicates the time in months required to get the first full-time job. It does not take into account the relatedness of the job to training.

Table 51 shows the number, percentage, and cumulative percentage of graduates who found their first full-time job in eleven categories ranging from immediately after graduation to nine months or longer.

Table 51. GENERAL PLACEMENT: FREQUENCY DISTRIBUTION FOR VOCATIONAL COURSE GRADUATES BY CLASS YEAR (BASED ON CASES THAT WENT DIRECTLY TO WORK)

General Placement	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
9.0 >	23	2.4	100.0	66	5.5	100.0	64	3.5	100.0	154	3.9	100.0
8.0	5	0.6	97.6	18	1.5	94.5	21	1.2	96.5	45	1.1	96.1
7.0	4	0.4	97.0	21	1.8	93.0	11	0.6	95.3	37	1.0	95.0
6.0	9	0.9	96.6	34	2.9	91.2	33	1.8	94.7	76	1.9	94.0
5.0	9	1.0	95.7	24	2.0	88.3	34	1.9	92.9	67	1.7	92.1
4.0	22	2.3	94.7	52	4.3	86.3	75	4.2	91.0	149	3.7	90.4
3.0	45	4.8	92.4	97	8.2	82.0	146	8.1	86.8	290	7.4	86.7
2.0	68	7.2	87.6	120	10.0	73.8	176	9.7	78.7	364	9.1	79.3
1.0	201	21.2	80.4	232	19.5	63.8	347	19.2	69.0	783	19.8	70.2
0.5	141	14.9	59.2	141	11.8	44.3	251	13.9	49.8	538	13.6	50.4
0.1	419	44.3	44.3	388	32.5	32.5	649	35.9	35.9	1457	36.8	36.8
Number	946			1,193			1,807			3,960		
Mean	1.3			2.3			1.7			1.8		
Median	0.5			1.0			1.0			0.5		
S.D.	2.6			4.0			2.8			3.2		

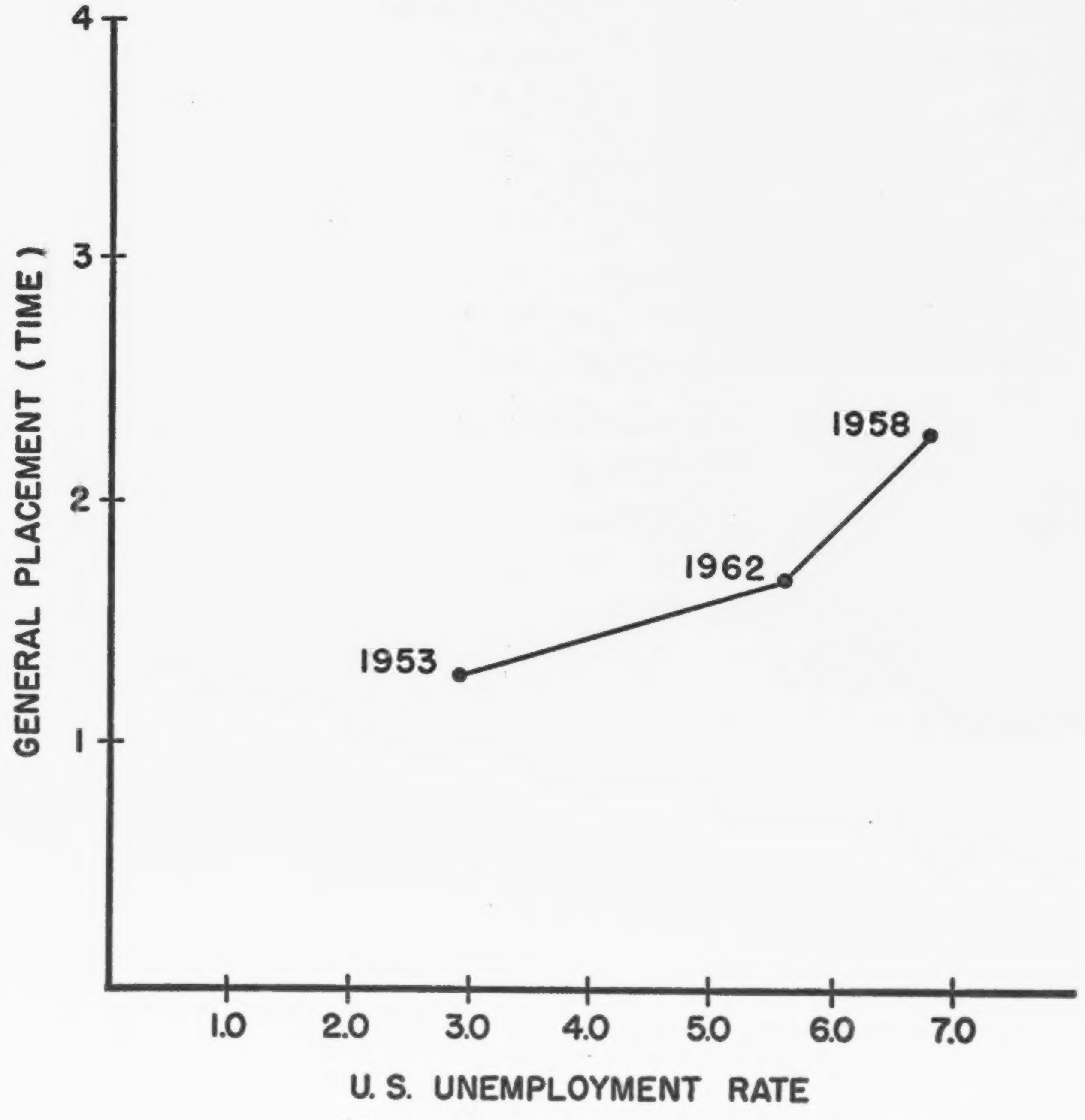
The results of combining the graduates of 1953, 1958, and 1962 indicate that 70.2 percent of the graduates found their first job within one month after graduation. The mean time for all graduates, excluding those who went into military service or continued full time in school, is 1.8 months; the median is .5 of a month. Apparently, most graduates are able to find full-time employment soon after graduation.

Does the time required to get the first job vary with the year of graduation? Are schools improving in their ability to reduce the time required to place graduates? The data in Table 51 suggests two answers. For one, the level of the economy at the time of graduation appears to be a factor influencing time required to obtain a job. The mean and median times required to get a job in 1953, a year the economy was in boom proportion, were 1.3 months and .5 of a month respectively. In contrast, the equivalent values for 1958, a recession year, were 2.3 months and 1.0 month. In 1962, with the economy out of the recession and heading toward the longest peace-time upward trend in history, the time to get a full-time job dropped to a mean of 1.7 months and a median of .5 of a month.

The relationship between the economy, measured in terms of unemployment rate, admittedly an imperfect measure because it does not describe precisely the employment opportunity for young people, and general placement is shown in Figure 5. It suggests, as one might expect, that a school's ability to place graduates promptly into full-time jobs is, in part, limited by the level of economy that prevails in the region served by the school.

The data also suggest that it is getting more difficult to place graduates, that more time is required to find jobs. Whereas 80 percent of the 1953 graduates who looked for jobs found them within one month after graduation, only 69 percent of the 1962 graduates found their job within one month. The point is not conclusive. The difference may be wholly attributable to the difference in the general economy level between 1953 and 1962.

Figure 5. RELATIONSHIP BETWEEN ANNUAL U.S. RATE OF UNEMPLOYMENT AND GENERAL PLACEMENT MEASURE FOR 1953, 1958, AND 1962 GRADUATES



(Source: Bureau of Labor Statistics)

General Placement by Type of School

How do the vocational course graduates from comprehensive schools compare with those from vocational schools in terms of general placement? The comparison data is shown in Table 52. Those who graduated from vocational schools require slightly less time to find a job than those who graduate from comprehensive schools. The differences, however, are not substantial. Moreover, one cannot conclude that the differences between the two types of schools are the result of differences in degree of effort or methods used to place graduates. Other variables, unrelated to school placement efforts, such as characteristics of graduates or employment opportunity for trades offered, may be responsible The relationship between school placement efforts and general placement performance will be explored in a later study report.

Table 52. GENERAL PLACEMENT: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS (BASED ON CASES THAT WENT DIRECTLY TO WORK)

Year of Graduation	Type of School	General Placement		
		N	M	S.D.
1953	Vocational	591	1.1	2.4
	Comprehensive	355	1.5	3.0
1958	Vocational	692	2.3	4.1
	Comprehensive	501	2.3	4.0
1962	Vocational	1,086	1.5	2.7
	Comprehensive	721	1.9	2.9
Combined	Vocational	2,381	1.7	3.1
	Comprehensive	1,579	2.0	3.3

General Placement by Enrollment

Is general placement related to school enrollment? Do large enrollment schools, for example, have a lower general placement time than medium or small enrollment schools?

Table 53 shows by graduating class the differences in general placement performance for three enrollment categories, i.e. less than 500, between 500 and 1500, and greater than 1500. The data suggest that the graduates from large enrollment schools require slightly less time in months to obtain a job than graduates from medium and small enrollment schools. There is also a suggestion that the small schools do slightly better than the medium enrollment schools. From a practical standpoint, the differences are negligible. The size of the school in terms of total enrollment does not appear to be a major factor in the placement of graduates into full-time jobs.

Table 53. GENERAL PLACEMENT: COMPARISON OF SCHOOL TOTAL ENROLLMENT CATEGORIES

Year of Graduation	School Enrollment	General Placement		
		N	M	S.D.
1953	< 500	349	1.2	2.3
	500-1500	340	1.4	3.1
	>1500	257	1.2	2.3
1958	< 500	398	2.4	4.2
	500-1500	475	2.3	4.1
	>1500	320	2.1	3.7
1962	< 500	606	1.6	2.8
	500-1500	654	1.9	3.1
	>1500	547	1.6	2.4
Combined	< 500	1,355	1.7	3.2
	500-1500	1,478	1.9	3.5
	>1500	1,127	1.6	2.8

General Placement by Type of Graduate

How do the vocational course graduates compare with academic course graduates in terms of time required to get a full-time job? Table 54 provides the comparison data for all vocational course graduates who went directly to work versus all academic course graduates who went directly to work, i.e. excluded are those who continued full-time in school or who went into military service. It takes the academic graduate, for the combined groups, 3.1 months to find his first full-time job, compared with 1.8 months for the vocational graduate. Moreover, the difference is greatest in the recession year of 1958, indicating that the academic course graduate who looks for a job after high school is particularly at a disadvantage during a down turn in the economy.

Table 54. GENERAL PLACEMENT: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (BASED ON CASES THAT WENT DIRECTLY TO WORK)

Year of Graduation	Type of Graduate	General Placement		
		N	M	S.D.
1953	Vocational	946	1.3	2.6
	Academic	175	2.6	4.8
1958	Vocational	1193	2.3	4.0
	Academic	207	4.0	5.7
1962	Vocational	1807	1.7	2.8
	Academic	256	2.8	4.3
Combined	Vocational	3960	1.8	3.2
	Academic	638	3.1	5.0

Table 55 presents a more equitable comparison, vocational versus academic course graduates from the same comprehensive schools. The general conclusion is unchanged. It takes academic course graduates a mean of 1 to 1.7 months longer than vocational course graduates to get the first full-time job, depending upon the economy level.

Table 55. GENERAL PLACEMENT: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES FROM THE SAME COMPREHENSIVE SCHOOLS

Year of Graduation	Type of Graduate	General Placement		
		N	M	S.D.
1953	Vocational	355	1.5	3.0
	Academic	175	2.6	4.8
1958	Vocational	501	2.3	4.0
	Academic	207	4.0	5.7
1962	Vocational	721	1.9	2.9
	Academic	256	2.8	4.3
Combined	Vocational	1579	2.0	3.3
	Academic	638	3.1	5.0

General Placement by Race

How does the Negro graduate compare with the white in terms of the general placement measure? Does it take him longer to find full-time employment?

The comparison data are shown in Table 56. For each graduating class, the Negro graduate requires longer to find a job than the white. Considering all graduates, it takes the Negro twice as long to find a job, the mean being 1.6 months for the white graduates and 3.0 months for Negro graduates.

When Negroes and whites who graduated from the same high schools are compared, the difference in time required to get a job is still there. It takes the Negro almost twice as long to get a job, even when he has graduated from the same school. Equality of education does not necessarily mean equality of employment opportunity.

Table 56. GENERAL PLACEMENT: COMPARISON OF RACE OF GRADUATES

Year of Graduation	Race of Graduate	General Placement		
		N	M	S.D.
1953	White	907	1.2	2.6
	Negro	28	1.6	2.2
	Other	3	0.7	0.2
1958	White	1,081	2.2	3.8
	Negro	83	3.4	4.8
	Other	5	7.0	9.3
1962	White	1,626	1.6	2.5
	Negro	132	3.1	4.5
	Other	5	3.5	6.3
Combined	White	3,627	1.7	3.0
	Negro	244	3.0	4.4
	Other	13	4.2	7.4

General Placement by Region

How do the geographic regions of the United States compare in terms of general placement performance? Are some regions consistently better than others from the standpoint of time required by graduates to get full-time jobs? Regional differences may reflect regional economy level differences. Should that be the case, the general placement performance of schools is better compared with regional standards than with a national standard.

The regional comparison data are shown in Table 57. Clearly, there are marked regional differences for each of the three graduating class years. For example, in 1953 the mean time required to get a job in New England was .8 of a month; in the Great Lakes area, it was 1.6 months; and in the Pacific area, it was 2.5 months. It cannot be concluded that these differences are solely the result of regional differences in economy level. However, there is indirect evidence that economy level differences do account for a degree

Table 57. GENERAL PLACEMENT: COMPARISON OF EIGHT GEOGRAPHIC REGIONS

Year of Graduation	Geographic Region	General Placement		
		N	M	S.D.
1953	New England	184	0.8	1.6
	Mideast	309	1.0	2.3
	Great Lakes	106	1.6	3.7
	Plains	88	1.2	2.3
	Southeast	179	1.7	2.7
	Southwest	30	1.5	2.3
	Rocky Mountains	12	1.4	2.4
	Pacific	38	2.5	4.6
1958	New England	209	1.6	2.5
	Mideast	360	2.4	3.8
	Great Lakes	156	2.7	4.5
	Plains	93	2.1	3.0
	Southeast	271	2.5	4.7
	Southwest	58	2.4	4.7
	Rocky Mountains	15	1.0	1.7
	Pacific	31	3.0	6.7
1962	New England	293	0.9	2.0
	Mideast	482	1.7	2.8
	Great Lakes	294	2.0	2.9
	Plains	164	2.0	3.1
	Southeast	396	2.0	2.9
	Southwest	88	1.9	3.0
	Rocky Mountains	19	1.1	1.6
	Pacific	71	1.4	1.5
Combined	New England	687	1.1	2.1
	Mideast	1155	1.7	3.1
	Great Lakes	560	2.1	3.6
	Plains	345	1.8	2.9
	Southeast	851	2.1	3.6
	Southwest	176	2.0	3.6
	Rocky Mountains	46	1.2	1.9
	Pacific	140	2.0	4.2

of the regional differences in general placement. With but one exception, the regional mean times required to get a full-time job increased substantially in 1958, a recession year. The exception, the Rocky Mountains area, can be attributed to the small number of cases that comprise the regional mean. In 1962, the regional mean times show a significant drop, a reflection of a higher economy level.

The regional differences suggest that graduate follow-up studies based upon regions or smaller units can be very misleading when generalized to the nation as a whole. It remains to be seen whether the other derived measures will show equally pronounced regional differences.

RELATEDNESS OF FIRST JOB TO TRADE STUDIED

Trend in Related Placement

The related placement measure combines the time required to get the first full-time job with how related the job is to the trade studied in high school. The equation is discussed in Chapter 3. To facilitate interpretation of the measure, Table 58 shows what the scores would be for each relatedness category for jobs obtained in four months or less. A graduate who gets a job in the same trade immediately upon graduation would have the maximal score of 100. If he got a job in a completely unrelated trade immediately upon graduation, he would have a score of 25.

Table 58. GUIDE FOR INTERPRETATION OF RELATED PLACEMENT MEASURE

		Relatedness of First Job to Trade			
		Same Trade	Highly Related	Slightly Related	Completely Unrelated
Months to Get First Job	0	100	75	50	25
	.5	67	50	33	17
	1	50	38	25	12
	2	40	30	20	10
	3	36	27	18	9
	4	33	25	17	8

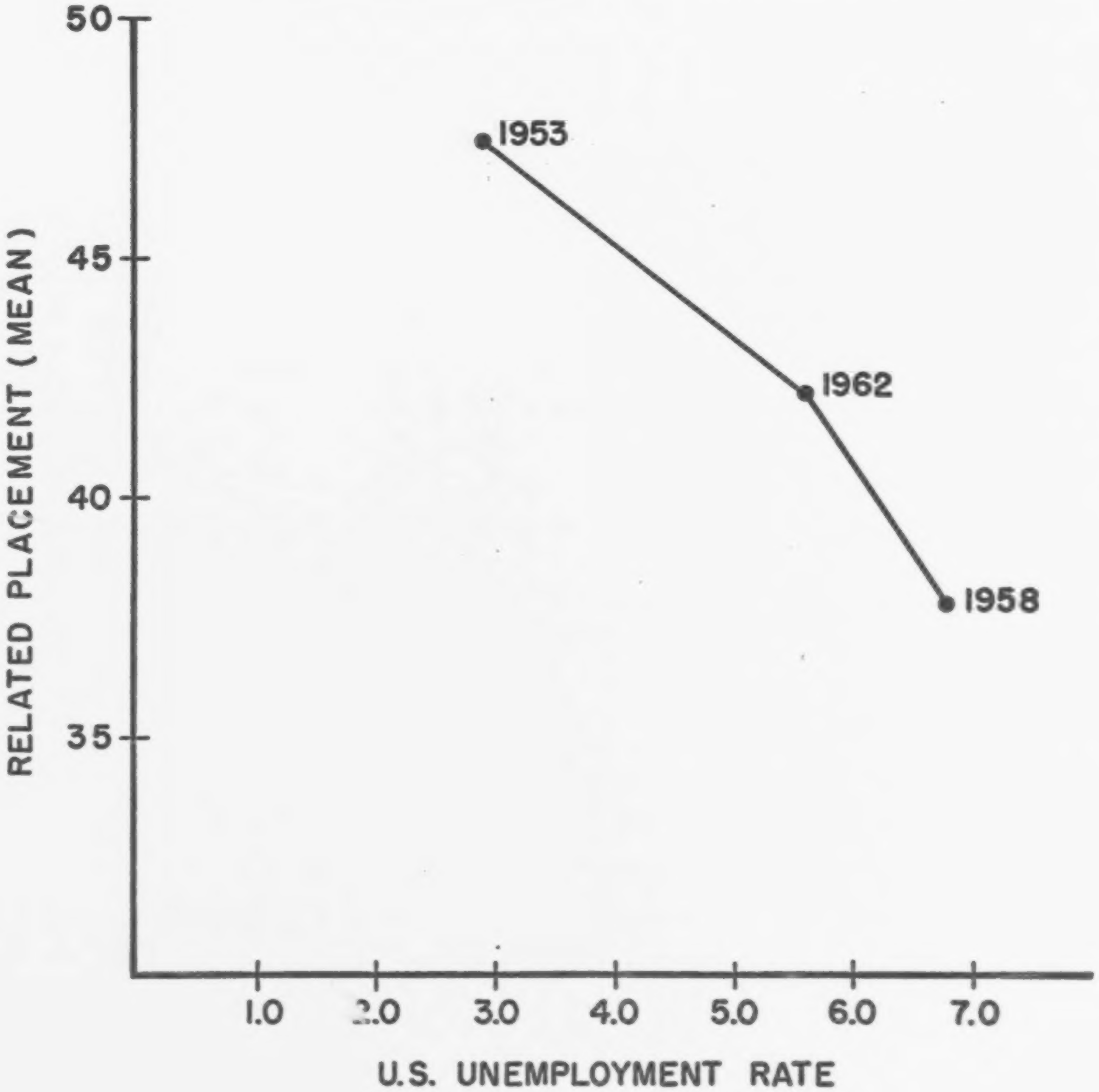
With that background, Table 59 can be interpreted more readily. It shows the frequency, percentage, and cumulative percentage distribution of the related placement scores for the three graduating classes separately and combined. There is no consistent trend in the mean and median values by graduating class year. The measure appears to be related to the level of the economy. The median drops sharply from 40 in 1953, a boom economy year, to 25 in 1958, a recession year, and increases to 33 in 1962, when the economy was again at a fairly high level as measured by unemployment rate. The data establish that the graduate's likelihood of getting a job in the same trade studied or a highly related trade is influenced by the economy level.

Table 59. RELATED PLACEMENT: FREQUENCY DISTRIBUTION FOR VOCATIONAL COURSE GRADUATES BY CLASS YEAR (BASED ON CASES THAT WENT DIRECTLY TO WORK)

Related Placement	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
91-100	173	18.9	18.9	132	11.7	11.7	234	14.0	14.0	540	14.5	14.5
81- 90	0	0.0	18.9	0	0.0	11.7	0	0.0	14.0	0	0.0	14.5
71- 80	87	9.5	28.4	80	7.1	18.8	144	8.6	22.6	311	8.3	22.8
61- 70	47	5.2	33.6	43	3.8	22.6	71	4.3	26.9	161	4.4	27.2
51- 60	0	0.0	33.6	0	0.0	22.6	0	0.0	26.9	0	0.0	27.2
41- 50	144	15.7	49.3	112	10.0	32.6	228	13.6	40.5	488	13.1	40.3
31- 40	61	6.7	56.0	114	10.1	42.7	193	11.5	52.0	370	9.9	50.2
21- 30	150	16.3	72.3	216	19.2	61.9	266	15.9	67.9	633	17.0	67.2
11- 20	158	17.3	89.6	230	20.4	82.3	285	17.1	85.0	675	18.1	85.3
1- 10	95	10.4	100.0	199	17.7	100.0	251	15.0	100.0	547	14.7	100.0
Number	915			1,126			1,672			3,725		
Mean	47.4			37.8			42.2			42.1		
Median	40			25			33			31		
S.D.	32.3			29.8			30.7			31.0		

Figure 6 shows the relationship between the related placement means for the three graduating classes and the United States rate of unemployment in those years. The measure very clearly is effected by the general unemployment rate which is a reflection of the economy level.

Figure 6. RELATIONSHIP BETWEEN RELATED PLACEMENT MEASURE AND U.S. RATE OF UNEMPLOYMENT FOR THE YEARS 1953, 1958, AND 1962



(Source: Bureau of Labor Statistics)

Table 60 shows the relatedness of the first job to the trade studied more directly in the form of the number and percent of graduates in each relatedness category. In 1953, 50.8 percent of the graduates went into the same or a highly related trade. In 1958, the recession year, the percentage dropped 44.2, and in 1962, with a substantially higher level of economy, the percentage increased to 49.4, almost back to the 1953 level. Even in the best year, less than one-third of the graduates go into the same trade studied in high school. In every year, a greater percentage go into a completely unrelated trade than go into the trade studied. In a later section, the reasons given by graduates for not going into the trade studied will be analyzed.

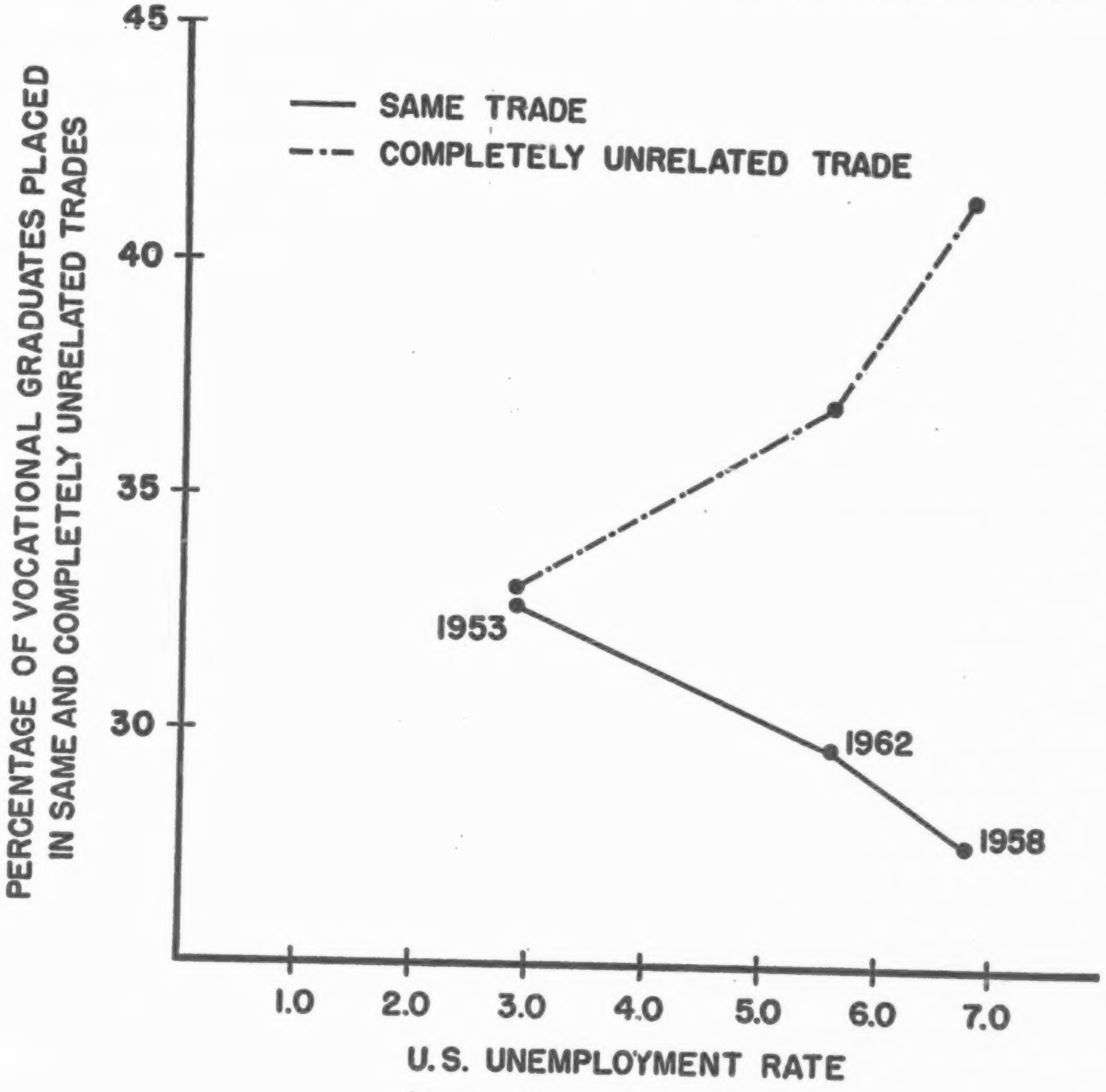
Table 60. TREND IN NUMBER AND PERCENTAGE OF VOCATIONAL GRADUATES PLACED IN FOUR CATEGORIES OF RELATIONSHIP BETWEEN TRADE STUDIED AND FIRST FULL-TIME JOB *

Relation of First Job to Trade Studied in High School	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Same trade	301	32.6	313	27.6	498	29.6	1118	29.8
Highly related trade	168	18.2	189	16.6	333	19.8	691	18.4
Slightly related trade	150	16.3	164	14.4	229	13.6	544	14.5
Completely unrelated trade	303	32.9	470	41.4	625	37.1	1402	37.3

* Based on usable data from questionnaire Item 14.

The relationship between the percentage of graduates who go into the trade studied and the United States rate of unemployment is shown in Figure 7. As the rate of unemployment increases, the percentage who go into the trade studied decreases. The broken line shows the percentage who went into a completely unrelated trade. It increases sharply as rate of unemployment increases, indicating that decreases in the level of economy divert substantial numbers of graduates from the trade studied to completely unrelated trades. Most of those so diverted never enter the trade. They tend to stay in work wholly unrelated to what they studied in high school.

Figure 7. RELATIONSHIP BETWEEN U.S. RATE OF UNEMPLOYMENT AND PERCENTAGE OF GRADUATES PLACED IN TRADE STUDIED AND IN COMPLETELY UNRELATED TRADES



(Source: Bureau of Labor Statistics)

It should be pointed out that the relatedness of the first job to the trade studied is reported by the graduate. It represents his judgment. However, an opportunity to check his judgment was available. He was asked to write the title of his position, occupation or trade on the questionnaire.

Titles were compared with ratings of relatedness. With few exceptions, those who claimed their first job was in the same trade studied in high school identified their job by a title in agreement with the title of the course taken. Also, those who claimed their first job was completely unrelated to the trade studied in high school listed titles that overwhelmingly confirmed their ratings of "completely unrelated." It was concluded that the graduates were capable of judging the relatedness between their first job and the trade studied, at least at the extreme anchor points.

Related Placement by Type of School

How do comprehensive high schools compare with vocational high schools in terms of related placement performance? Table 61 provides the data.

Table 61. RELATED PLACEMENT: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS

Year of Graduation	Type of School	Related Placement		
		N	M	S.D.
1953	Vocational	575	51.6	32.4
	Comprehensive	340	40.3	30.9
1958	Vocational	656	40.1	30.8
	Comprehensive	470	34.5	28.1
1962	Vocational	1,010	45.6	30.8
	Comprehensive	622	37.2	29.6
Combined	Vocational	2,252	45.5	31.5
	Comprehensive	1,473	37.0	29.5

For each of the three graduating classes, the vocational schools out performed the comprehensive schools in related placement performance. The differences are both significant and substantial. The performance of both types of schools decreased in the recession year of 1958, and increased when the economy was at a higher level in 1962. The comprehensive schools decreased from 40.3 in 1953 to 34.5 in 1958, a drop of 5.8, whereas the vocational schools dropped from 51.6 in 1953 to 40.1 in 1958, a decrease of 11.1. The apparent greater resistance of the comprehensive school to economy effects has no significance. It is attributable to an initially lower placement performance.

The comparison of the two types of schools in terms of percentage of graduates placed into each relatedness category is shown in Table 62. Over all years, the vocational schools placed 33.6 percent of their graduates who went directly to work into the trade studied, whereas the comprehensive schools placed only 23.9 percent into the trade studied. The schools also differ at the other extreme. Of the vocational school graduates, 33.1 percent got their first job in a trade completely unrelated to the trade they studied in high school, whereas almost 44 percent of the comprehensive school graduates went into completely unrelated trades. Clearly, the vocational schools do a better

Table 62. COMPARISON BY TYPE OF SCHOOL: NUMBER AND PERCENTAGE OF GRADUATES PLACED IN FOUR CATEGORIES OF RELATIONSHIP BETWEEN TRADE STUDIED AND FIRST FULL-TIME JOB

Relation of First Job to Trade Training	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Same trade	763	33.6	355	23.9
Highly related trade	447	19.7	244	16.5
Slightly related trade	311	13.7	233	15.7
Completely unrelated trade . . .	751	33.1	651	43.9

job of placing their graduates into the trade or highly related trades. A later analysis will shed more light on the reasons for the difference.

Related Placement by Enrollment

Does the size of the school's enrollment have any relationship with placement performance? Do small enrollment schools, for example, do a better job of placing their graduates into the trade than large enrollment schools? Table 63 provides the data. For the combined years, it appears that related placement performance is inversely related to total school enrollment. Schools with an enrollment less than 500 do better as a group than those in the larger enrollment categories. The differences, however, are not substantial.

Table 63. RELATED PLACEMENT: COMPARISON OF SCHOOL TOTAL ENROLLMENT CATEGORIES

Year of Graduation	School Enrollment	Related Placement		
		N	M	S.D.
1953	< 500	336	48.8	31.4
	500 - 1500	330	47.9	33.4
	> 1500	249	44.9	31.9
1958	< 500	368	38.1	29.9
	500 - 1500	454	38.4	30.6
	> 1500	304	36.3	28.4
1962	< 500	561	45.3	31.1
	500 - 1500	608	39.9	30.1
	> 1500	503	41.6	30.6
Combined	< 500	1,267	44.1	31.1
	500 - 1500	1,400	41.3	31.3
	> 1500	1,058	40.9	30.4

The influence of school enrollment upon the relatedness of first job to trade studied is further shown in Table 64. Schools with an enrollment less than 500 had a greater percentage of graduates enter the trade for which trained (34.5 percent) and a smaller percentage of graduates enter completely unrelated trades (34.3 percent) than did the higher enrollment schools. A later report will compare small, medium and large enrollment school in terms of what they do to place graduates. That analysis may help explain the differences in related placement performance.

Table 64. COMPARISON BY ENROLLMENT: NUMBER AND PERCENTAGE OF GRADUATES PLACED IN FOUR CATEGORIES OF RELATIONSHIP BETWEEN TRADE STUDIED AND FIRST FULL-TIME JOB

Relation of First Job To Trade Training	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Same trade	441	34.5	389	27.5	288	27.1
Highly related trade	230	18.0	271	19.2	190	17.9
Slightly related trade . . .	169	13.2	200	14.2	175	16.5
Completely unrelated trade .	439	34.3	553	39.1	410	38.6

Related Placement and Race

Is the race of the vocational graduate a factor in related placement? Are Negro graduates as likely to be placed in the trade as white graduates? Table 65 provides the data. For every graduating class, the related placement of Negroes is significantly and substantially lower than that of white graduates. The Negro is clearly at a disadvantage. The factor has tremendous importance for current efforts to elevate the status of the Negro through vocational education. If he is not placed in the trades for which he is trained or at least highly related trades, the incentive to improve his status by education is weakened.

Table 65. RELATED PLACEMENT: COMPARISON BY RACE OF VOCATIONAL GRADUATES

Year of Graduation	Race of Graduate	Related Placement N	Related Placement M	Related Placement S.D.
1953	White	880	48.0	32.4
	Negro	25	30.4	25.4
	Other	3	28.0	15.6
1958	White	1031	38.6	30.2
	Negro	71	26.0	21.0
	Other	4	29.8	27.0
1962	White	1507	43.5	30.9
	Negro	123	27.6	23.7
	Other	4	58.2	42.2
Combined	White	3429	43.2	31.3
	Negro	220	27.4	23.1
	Other	11	39.6	34.3

The difference in related placement between Negro and white graduates is more dramatically shown in Table 66. Over all years, only 17.3 percent of the Negro graduates were placed in the trade studied. Almost 58 percent were placed in completely unrelated trades. Comparable figures for white graduates are 30.6 percent placed in the trade, and 36 percent placed in completely unrelated trades. There is no disputing the disadvantage of the Negro graduate. A small minority find work in the trade studied.

Table 66. COMPARISON BY RACE OF GRADUATE: NUMBER AND PERCENTAGE OF GRADUATES PLACED IN FOUR CATEGORIES OF RELATIONSHIP BETWEEN TRADE STUDIED AND FIRST FULL-TIME JOB

Relation of First Job to Trade Training	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
Same trade	1058	30.6	39	17.3	3	27.3
Highly related trade	640	18.5	36	15.9	1	9.1
Slightly related trade	514	14.9	21	9.3	1	9.1
Completely unrelated trade . . .	1241	35.9	130	57.5	6	54.5

Related Placement by Region

An earlier section indicated significant regional differences in general placement, the time required to find a full-time job after graduation. That prompts a question about regional differences in related placement. Are some regions consistently better than others in terms of placing their graduates in the trades for which trained? Table 67 provides the data. There are consistent regional differences. Placement related to the trade studied is highest in the New England region and lowest in the Pacific region for the combined years. New England is consistently higher than the other regions.

Undoubtedly, the regional differences are partially attributable to differences in the level of economy that prevails. However, direct support for this assumption is lacking. Rate of employment figures are not available by region for the three years concerned.

The regional differences again point out the fallacy of projecting regional survey results to the country as a whole. The North Atlantic State follow-up studies have consistently reported a higher percentage of placement of graduates in the trade or related trade than has been reported in this study. Regional differences are a partial answer to the apparent discrepancy.

Table 67. RELATED PLACEMENT: COMPARISON OF EIGHT GEOGRAPHIC REGIONS

Year of Graduation	Geographic Region	Related Placement		
		N	M	S.D.
1953	New England	181	58.2	31.2
	Mideast	296	48.3	33.0
	Great Lakes	101	44.5	30.4
	Plains	86	46.6	30.9
	Southeast	171	39.3	30.3
	Southwest	30	46.1	35.1
	Rocky Mountains	12	45.3	33.7
	Pacific	38	37.5	31.0
1958	New England	202	44.8	31.4
	Mideast	340	38.4	30.6
	Great Lakes	148	34.5	29.5
	Plains	88	32.6	26.9
	Southeast	253	34.2	27.8
	Southwest	54	40.8	31.5
	Rocky Mountains	14	46.9	27.3
	Pacific	27	33.6	24.9
1962	New England	278	57.1	31.4
	Mideast	446	41.5	30.6
	Great Lakes	273	38.9	29.6
	Plains	141	36.4	28.6
	Southeast	369	37.7	28.8
	Southwest	80	40.7	30.5
	Rocky Mountains	18	46.8	33.5
	Pacific	67	36.4	26.4
Combined	New England	662	53.6	31.8
	Mideast	1,085	42.4	31.4
	Great Lakes	526	38.9	30.0
	Plains	315	38.1	29.3
	Southeast	797	36.8	28.8
	Southwest	164	41.7	31.8
	Rocky Mountains	44	46.4	31.7
	Pacific	132	36.1	27.6

REASONS FOR NOT GETTING FIRST JOB IN TRADE

The majority of vocational course graduates do not enter the trade for which trained in high school. For all years combined, 51.8 percent of the direct to work graduates went into a trade slightly related or completely unrelated to the trade studied. What were their reasons for not getting a job in the trade?

The graduates were asked to list reasons for not getting the first full-time job in the trade. Two of the listed reasons, i.e. learned new trade by continuing in school and learned new trade in military service, do not apply to the present analysis which deals only with those who went directly from school to full-time employment. These two answer categories have been eliminated from the tables presented in this section.

Analysis by Year of Graduation

What are the reasons given by graduates for not getting their first job in the trade? What is their relative weight in terms of percentages? Are there any significant trends in the reasons given? Table 68 presents the data.

For the combined graduates, 35.6 percent indicated they did not get a job in the trade because no job was available. This 35.6 percent is an estimated 18.4 percent of all vocational course graduates who went directly to work. (The estimate was arrived at by taking 35.6 percent of the total whose first job was in a slightly related or completely unrelated trade, and expressing the result as a percentage of the total who went directly to work. The procedure provides a correction for the approximately four hundred cases who failed to indicate a reason for not getting a job in the trade). What significance can be attached to the 18.4 percent value? It suggests that schools are sending a substantial number of graduates into communities that do not have jobs in the trades being taught in the schools. This may or may not be considered a problem by the vocational educator.

Table 68. REASONS FOR NON-PLACEMENT IN TRADE BY YEAR OF GRADUATION

Reason Given For Not Getting First Job in Trade Studied	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
No job available in trade	107	28.8	204	39.4	243	36.4	554	35.6
Decided I liked other work better	104	28.0	127	24.6	175	26.2	406	26.1
Not accepted as apprentice . . .	44	11.9	52	10.0	65	9.7	161	10.4
Insufficient pay	13	3.5	10	1.9	11	1.6	34	2.2
Other than above	103	27.7	124	24.1	173	25.9	400	25.8

Approximately 26 percent of the graduates whose first job was in slightly related or completely unrelated trades gave as the reason for not getting a job in the trade that they preferred other work. By the same procedure described previously, this 26 percent comes to 13.5 percent of all graduates who went direct to work. Are these graduates who happened to find an unrelated job in their search for work, and then decided that they preferred the unrelated work to work in the trade? Or, are they graduates who even before graduation had decided they did not want to work in the trade studied? The distinction is important. Unfortunately, the data is of no help in regard to the interpretation. More research needs to be done on this important point.

Approximately 10 percent gave as their reason for not getting a job in the trade that they were not accepted as an apprentice. This amounts to 5.4 percent of the total graduates that went directly to work. To what extent the percentage constitutes a problem is something the vocational educators must decide.

What are the trends in the reasons given? The percentage who indicated they did not get a job in the trade increased from 28.8 percent in 1953, a high employment year, to 39.4 percent in 1958, a recession year. This confirms independently the interpretation given earlier to the relationship between related placement and level of unemployment. What is disturbing is the continued high percentage of 1962 graduates in slightly related or completely unrelated trades who said they did not get a job in the trade studied because there were no trade jobs available; 36.4 percent! The 1962 economy level was closer to the 1953 economy level than this percentage value would imply.

The percentage of graduates who prefer other work to trade work is fairly constant. The percentage of graduates who claim they were not accepted into apprenticeship programs shows a slight, almost negligible, decrease. The trend does not warrant the attachment of any significance.

Analysis by Type of School

How do graduates of vocational and comprehensive schools compare in terms of reasons given for not getting the first job in the trade? Table 69 presents the data.

Table 69. REASONS FOR NON-PLACEMENT IN TRADE BY TYPE OF SCHOOL

Reason Given for Not Getting First Job in Trade Studied	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
No job available in trade	298	35.7	257	35.4
Decided I liked other work better	215	25.8	191	26.3
Not accepted as apprentice . . .	91	10.9	70	9.7
Insufficient pay	21	2.5	13	1.8
Other than above	209	25.1	194	26.7

Clearly there are no significant differences in the reasons given by the graduates of both type of schools for not getting a job in the trade.

Analysis by School Enrollment

How do graduates from small, medium and large enrollment schools, as defined by this study, compare on terms of the reasons given for not getting their first job in the trade? Table 70 presents the data.

Table 70. REASONS FOR NON-PLACEMENT IN TRADE BY SCHOOL ENROLLMENT

Reason Given For Not Getting First Job In Trade Studied	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
No job available in trade	180	37.1	227	37.3	148	31.8
Decided I liked other work better	120	24.7	159	26.2	127	27.3
Not accepted as apprentice . . .	54	11.1	47	7.7	60	12.9
Insufficient pay	12	2.5	18	3.0	4	0.8
Other than above	119	24.6	157	25.8	127	27.2

Fewer of the graduates from schools with enrollments above 1500 gave the reason, no job available in the trade, for not getting a job in the trade. This may be because such schools are located in major metropolitan areas where trade job opportunities are greater. A later analysis will show that the percentage of graduates from large enrollment schools who acknowledge school assistance in getting a job was actually less than from medium and small enrollment schools. It would appear, then, that the large enrollment schools, because of their location, have an employment opportunity advantage.

The percentage of graduates who preferred to work in a trade other than the one studied increased from 24.7 percent for small enrollment schools to 26.2 percent for medium enrollment schools to 27.3 percent for large enrollment schools. The increase is small but consistant. Interpretation is difficult. It may be that more graduates are attracted to other trades because of the greater and more diverse employment opportunity in the major metropolitan areas. It cannot be concluded that large schools turn out more graduates who have made up their minds in advance not to enter the trades.

Analysis by Race of Graduate

How do white and Negro graduates compare in terms of reasons given for not getting a job in the trade? Table 71 provides the data. Despite the relatively small number of Negro graduates, the analysis indicates important differences.

Table 71. REASONS FOR NON-PLACEMENT IN TRADE BY RACE OF GRADUATE

Reason Given For Not Getting First Job in Trade Studied	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
No job available in trade	492	35.0	52	41.6	1	25.0
Decided I liked other work better	375	26.7	23	18.4	1	25.0
Not accepted as apprentice . . .	131	9.3	27	21.6	1	25.0
Insufficient pay	34	2.4	0	0.0	0	0.0
Other than above	372	26.5	23	18.4	1	25.0

A larger percentage of Negro graduates reported no job was available in the trade (41.6 percent versus 35 percent for white graduates). A smaller per cent of Negro graduates reported they liked other work better than the trade studied (18.4 percent versus 26.7 percent for white graduates). A substantially larger percentage of Negro than white graduates reported they obtained no job in the trade because they were not accepted as an apprentice (21.6 percent versus 9.3 percent for white graduates). These facts suggest, as was pointed out earlier, that the Negro graduate is at a decided disadvantage in terms of placement in the trade. His much less acceptance by local apprenticeship programs may change with time, but currently it is still an obstacle to his aspiration to work in the trade studied.

GRADUATES OPINION OF PREPARATION FOR TRADE

Graduates who went directly to work in the same trade studied or a highly related trade were asked to express their general opinion of how well their vocational course prepared them for their first job. A generally favorable reaction can be anticipated when opinions of this kind are requested.

Analysis by Year of Graduation

Do the graduates from the three years of graduation differ significantly in their opinions of how well their vocational course prepared them for their first job in the trade or a highly related trade? Is there a trend? Table 72 provides the data.

Table 72. GRADUATE'S OPINION OF HIS PREPARATION FOR TRADE BY YEAR OF GRADUATION

How Well Did Vocational Course Prepare You For Job in Trade?	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Exceptionally well prepared	236	52.9	222	48.9	383	49.7	841	50.4
Well prepared on the whole	191	42.8	211	46.5	365	47.4	767	45.9
Poorly prepared	19	4.3	21	4.6	22	2.9	62	3.7
Weighted Mean	2.49		2.44		2.47		2.47	

The combined graduates have a very favorable opinion of the vocational course they took. Over 50 percent indicated they were exceptionally well prepared and almost 46 percent claimed they were, on the whole, well prepared.

There are no substantial differences between the three graduating classes. The three categories were weighted 3, 2 and 1 respectively to obtain a weighted average of 2.5 for 1953 graduates, 2.4 for 1958 graduates and 2.5 for 1962 graduates. The values indicate the lack of a decreasing or increasing trend.

Analysis by Type of School

Do graduates from vocational and comprehensive schools differ in their opinion of how well their vocational course has prepared them for the trade? Table 73 presents the data.

Table 73. GRADUATES OPINION OF HIS PREPARATION FOR TRADE BY TYPE OF SCHOOL

How Well Did Vocational Course Prepare You For Job in Trade?	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Exceptionally well prepared	567	49.7	279	52.0
Well prepared on the whole	530	46.5	238	44.4
Poorly prepared	43	3.8	19	3.6
Weighted Mean	2.46		2.48	

The percentages suggest that graduates of comprehensive schools have about the same opinion of their former vocational course as graduates of vocational schools. The weighted average was 2.46 for comprehensive school graduates versus 2.48 for vocational school graduates, indicating no significant difference between the two types of schools.

Analysis by School Enrollment

Do graduates from small, medium and large enrollment schools, as defined by this study, differ significantly in their opinions of how well their vocational course prepared them for their first job in the trade or a highly related trade? The data is shown in Table 74.

Table 74. GRADUATE'S OPINION OF HIS PREPARATION FOR THE TRADE BY SCHOOL ENROLLMENT

How Well Did Vocational Course Prepare You For Job in Trade?	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Exceptionally well prepared	311	49.9	314	50.9	221	50.7
Well prepared on the whole	288	46.2	280	45.4	200	45.9
Poorly prepared	24	3.9	23	3.7	15	3.4
Weighted Mean	2.46		2.47		2.47	

School enrollment is not a factor related to the opinion of graduates on how well their vocational course prepared them for the trade. The weighted averages for the three enrollment categories are clearly not different.

Analysis by Race of Graduate

The relatively small number of Negro graduates that went directly to work in the trade studied or a highly related trade made this analysis inadvisable.

METHODS USED TO GET FIRST JOB

The survey questionnaire listed a number of common means graduates use to find their first full-time job. Those surveyed were asked to mark with a check all that they used to get their first job. The results are given in the following sections for the graduates who went directly to work after graduation from high school.

Trends in Methods Used

Table 75 indicates the number and percentage of graduates who checked each method used to help them get their first job. Many checked a combination of methods.

Table 75. METHODS USED TO GET FIRST FULL-TIME JOB BY YEAR OF GRADUATION *

Means Used to Get First Full-time Job After Graduation	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Answering want-ad	74	7.8	90	7.7	126	7.2	290	7.5
Private employment agency	6	0.6	26	2.2	37	2.1	69	1.8
State employment agency	28	3.0	59	5.0	115	6.5	203	5.2 ▲
Help of school teacher	162	17.2	181	15.5	352	20.0	696	17.9
Help of school counselor	44	4.7	44	3.8	118	6.7	206	5.3
Help of school principal	26	2.8	27	2.3	76	4.3	130	3.3
Help of school placement service	121	12.8	87	7.4	161	9.2	371	9.6
Help of relative or friend	345	36.6	471	40.4	661	37.6	1485	38.2
Through school coop program	105	11.1	94	8.0	150	8.5	350	9.0
Other than above	206	21.9	302	25.9	347	19.7	857	22.1

* The arrowhead indicates the direction of a consistent trend.

For the combined years, the rank order of methods acknowledged was (1) friend or relative (38.2 percent), (2) school teacher (17.9 percent), (3) school placement service (9.6 percent), (4) school cooperative program (9.0 percent), (5) answering a want-ad (7.5 percent), (6) school counselor (5.3 percent), (7) state employment agency (5.2 percent), (8) school principal (3.3 percent), and (9) private employment agency (1.8 percent).

The endorsement of all sources of school help came to 45.1 percent for the combined years. Even though this is not a percentage of the graduates, it is an impressive acknowledgment of school assistance in finding employment.

The only consistent trend is the increased use of state employment services to find jobs. The increase is slight, from 3.0 percent in 1953 to 5.0 percent in 1958 to 6.5 percent in 1962. The lack of consistent trends is probably the result of the recession year of 1958. All of the school sources of help showed a drop in percentage acknowledged from 1953 to 1958, and rose again in 1962. Teachers, counselors and principals recieved acknowledgment from a greater percentage of 1962 graduates than from 1953 graduates. The increases, however, are not substantial. The individual vocational teacher stands out as the principle source of school assistance in finding jobs for graduates.

Methods Used by Type of School

How do vocational and comprehensive schools compare in terms of methods used by their graduates to obtain the first full-time job? Table 76 provides the data.

The percentage of vocational school graduates acknowledging school sources of employment assistance is greater for every source than the percentage of comprehensive graduates acknowledging such sources. Total acknowledgment of school sources is 52.6 percent for vocational school graduates versus 33.7 percent for comprehensive school graduates. The results indicate that vocational schools are more active on behalf of their graduates than comprehensive schools. That may be the reason why vocational schools have a superior performance in terms of both the general and related placement measures. They place a greater percentage of their graduates in jobs related to the trades studied.

Table 76. METHODS USED TO GET FIRST FULL-TIME JOB BY TYPE OF SCHOOL

Means Used to Get First Full-time Job After Graduation	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Answering want-ad	185	7.9	105	6.8
Private employment agency	41	1.7	28	1.8
State employment agency	123	5.2	80	5.2
Help of school teacher	446	19.0	250	16.2
Help of school counselor	151	6.4	55	3.6
Help of school principal	110	4.7	20	1.3
Help of school placement service	293	12.5	78	5.1
Help or relative or friend	794	33.9	691	44.9
Through school coop program	235	10.0	115	7.5
Other than above	484	20.6	373	24.2

Therein lies a reasonable implication. If placement in the trade studied or a highly related trade is to be the goal, more vigorous activity upon the part of school sources to assist placement of graduates in the trade may be the best means.

Methods Used by Type of Graduate

A comparison of how academic and vocational course graduates get their first job after high school is shown in Table 77. There is a striking difference in the degree to which the two types of graduates acknowledge the help of school sources. Academic graduates, if one accepts the correctness of their answers, receive virtually no assistance from school sources, such as teachers, counselors, placement services, and principals, in finding jobs.

Table 77. METHODS USED TO GET FIRST FULL-TIME JOB BY TYPE OF GRADUATE

Means Used to Get First Full-time Job After Graduation	TYPE OF GRADUATE			
	Vocational		Academic	
	N	%	N	%
Answering want-ad	290	7.5	27	5.6
Private employment agency	69	1.8	18	3.8
State employment agency	203	5.2	36	7.5
Help of school teacher	696	17.9	9	1.9
Help of school counselor	206	5.3	3	0.6
Help of school principal	130	3.3	4	0.8
Help of school placement service	371	9.6	6	1.2
Help of relative or friend	1485	38.2	251	52.5
Through school coop program	350	9.0	6	1.2
Other than above	857	22.1	133	27.8

Indeed, they receive less help than vocational graduates from the same schools acknowledged in Table 76. Perhaps this is because those close to vocational students have for many years felt a responsibility to assist graduates in finding jobs whereas those close to academic students have felt little or no such responsibility. The difference in assistance given to the two types of graduates probably accounts for the fact that it takes academic graduates who seek work after graduation twice as long on an average to find a full-time job as it does the vocational graduates. The lack of assistance at the end of four years is in striking contrast to the teacher and counselor influence on academic course selection at the start of the four years.

The academic graduate who seeks employment after graduation relies mainly on the help of friends and relatives. At least, 52.5 percent of those surveyed so report.

Methods Used by School Enrollment

Does the size of a school's enrollment have any influence on the methods used by its vocational graduates in finding their first full-time job? For example, do graduates from small enrollment schools get more help from school personnel in finding jobs than graduates of large enrollment schools? Table 78 provides the data.

Table 78. METHODS USED TO GET FIRST FULL-TIME JOB
BY TOTAL SCHOOL ENROLLMENT

Means Used to Get First Full-time Job After Graduation	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Answering want-ad	110	8.3	110	7.5	70	6.4
Private employment agency	16	1.2	35	2.4	18	1.6
State employment agency	64	4.8	82	5.6	57	5.2
Help of school teacher	249	18.9	245	16.8	202	18.3
Help of school counselor	49	3.7	120	8.2	37	3.4
Help of school principal	80	6.1	34	2.3	16	1.4
Help of school placement service	129	9.8	154	10.5	88	8.0
Help of relative or friend	502	38.0	537	36.8	446	40.5
Through school coop program	97	7.3	167	11.4	86	7.8
Other than above	282	21.4	308	21.1	267	24.2

The schools with enrollments between 500 and 1500 were acknowledged more frequently as a source of job-finding help to their graduates; 49.2 percent for such schools, 45.8 percent for schools with enrollments less than 500, and 39.3 percent for schools with enrollments above 1500. The values were obtained by summing the percent acknowledging such school source of help. The school counselors and cooperative programs are more frequently reported as a source of help in 500 to 1500 enrollment schools.

Help from the school principal decreases as school enrollment increases. Also, reliance on want-ads decreases slightly as school enrollment increases. This may be because graduates from very large schools reported greater help from relatives and friends than graduates from smaller enrollment schools.

Overall, the differences between schools in the three enrollment category are less impressive than the similarities. In all categories, the most frequently acknowledged source of help was "friends or relatives"; next came school teachers, followed by school placement service and school cooperative programs in that order.

Methods Used by Race of Graduate

Is the race of the graduate a variable that influences the means used by graduates to get their first full-time job? Are school personnel, for example, acknowledged as a job-finding help as frequently by Negro graduates as by white graduates? Table 79 provides the data.

The rank order of the top six methods of getting a job for the Negro graduate is (1) friend or relative (50.2 percent), (2) school teacher (16.3 percent), (3) state employment agency (8.4 percent), (4) answering want-ads (6.7 percent), (5) private employment agency (5.8 percent), and (6) school counselor (5.8 per cent).

The rank order of the top six methods of getting a job for the white graduate is (1) friend or relative (37.4 percent), (2) school teacher (17.9 percent), (3) school placement service (9.9 percent), (4) school cooperative program (9.5

percent), (5) answering want-ads (7.6 percent), and (6) school counselor (5.2 percent).

Compared with the white graduate, the Negro graduate apparently makes greater use of state employment agencies and friends or relatives. The Negro graduate receives less help from all school sources combined than does the white graduate. The difference is greatest for school placement services and school cooperative programs. Since several schools from which Negroes graduated were all-Negro schools, it may be that placement services and cooperative programs were lacking in these schools. The alternative interpretation is that these potential sources of assistance were available but not effective for the Negro graduate.

Table 79. METHODS USED TO GET FIRST FULL-TIME JOB BY RACE OF GRADUATE

Means Used to Get First Full-time Job After Graduation	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
Answering want-ad	269	7.6	16	6.7	1	7.7
Private employment agency	54	1.5	14	5.8	0	0.0
State employment agency	178	5.0	20	8.4	1	7.7
Help of school teacher	637	17.9	39	16.3	4	30.8
Help of school counselor	187	5.2	14	5.8	1	7.7
Help of school principal	124	3.5	5	2.1	0	0.0
Help of school placement service	352	9.9	10	4.2	1	7.7
Help of relative or friend	1332	37.4	120	50.2	5	38.5
Through school coop program	338	9.5	5	2.1	1	7.7
Other than above	793	22.3	42	17.6	2	15.4

6

EQUIPMENT, MATERIALS AND METHODS COMPARED

☐ The School-Industry Comparability Problem 1
☐ Comparability Analysis By Year 3
☐ Comparability Analysis By Type of School 7
☐ Comparability Analysis By Enrollment 11

CHAPTER 6 SUMMARY

The Comparability Problem

1. School versus industry. How comparable are tools and equipment, job methods and materials used in vocational shops to those used in school? If not comparable, how much new learning or relearning is required?

Comparability Analysis by Year

2. Tools and equipment. Less than 10 per cent of graduates reported that tools and equipment used on their first jobs in the trade were very much different from those used in school. The majority that did so required less than three months to learn what was different.

3. Work methods. Fully one-third of the graduates reported that the work methods used on their first jobs in the trade were very much different than those used in school. Seventy-five per cent of those that did required less than three months to learn what was different.

4. Work materials. About 16 per cent reported that the job materials used on their first job in the trade were very much different from those used in school. Seventy-three per cent of these reported it required less than three months to learn what was different.

Comparability Analysis by School

5. Tools, equipment, methods, and materials. There is no difference between vocational and comprehensive schools in terms of comparability of tools and equipment, methods and materials used in the schools and those used on their first jobs in the trade. The time required to learn what is very much different is the same for both types of schools.

Comparability Analysis by Enrollment

6. Tools, equipment, methods, and materials. There is no difference between small, medium, and large enrollment schools in terms of comparability of tools, equipment, methods and materials used in the schools and those used by graduates on their first jobs in the trade. The time required to learn what was very much different essentially was the same for all enrollment categories.

(Continued in Appendix B)

THE SCHOOL-INDUSTRY COMPARABILITY PROBLEM

How comparable are the tools and equipment, the job methods, and the materials used in school vocational shops to those used in industry? There is no broad based answer to this question, based upon actual surveys. There is, however, much opinion. A substantial number of shop instructors interviewed during the course of the present survey expressed the opinion that their shop tools and equipment were obsolescent if not obsolete, that their shop materials were inexpensive substitutes for what was normally used in the trade, and that their work methods were in many instances necessarily different from the methods used in the trade. It was generally felt that the lack of comparability was a disadvantage for the graduate, who would have much to relearn if he entered the trade. Some went so far as to claim that the lack of acceptance of graduates by the trade was because graduates were inadequately prepared on antiquated equipment, job methods not employed in the trade, and makeshift or substitute work materials. *

There appear to be two issues in the comparability problem: (1) Are the tools and equipment, the work methods, and the materials used in the vocational shops substantially different from what are used in the trades? Some shops report substantial differences. Others regard the differences as minor. Still others feel their equipment, methods and materials are comparable in all essential respects to the best used in the trade. (2) Does the graduate who learns the trade on equipment, methods, and materials that are very much different from that used in the trade suffer a significant relearning handicap when he enters the trade? Again, there are differences of opinion among instructors. Some feel the relearning problem is considerable, and causes skepticism about the adequacy of vocational education. Others feel

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* This phase of the survey will be covered in a separate report dealing with data derived from the schools.

the problem is there, but not seriously so. Still others feel the problem is more theoretical than real, that there will always be relearning and new learning no matter what equipment, methods, and materials are used in the vocational schools. The differences of opinion are undoubtedly, in part, because with different trades the comparability problem has different implications for retraining.

The graduates surveyed were asked to compare separately the (1) tools and equipment, (2) work methods, and (3) work materials used on their first full-time job with the equivalent used in their high school vocational course. The three answer categories were: "identical or almost so," "little real difference," and "very much different." Those who checked "very much different" were asked to indicate approximately how long it took them to learn or relearn what was so very much different. The six answer categories were: "only a few weeks," "less than three months," "about three to six months," "about six months to a year," and "more than a year." It was assumed that the graduates were capable of comparing school with job equipment, methods, and materials, and could estimate how much time was required to learn what was "very much different," where that was the case.

The data presented in this chapter are based upon only those whose first full-time job was in the same trade studied in high school.

COMPARABILITY ANALYSIS BY YEAR

Tools and Equipment

Table 80 indicates how graduates whose first job was in the same trade studied in high school compared tools and equipment on that job with what was used in high school.

Table 80 . TOOLS AND EQUIPMENT: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY YEAR OF GRADUATION

Tools and Equipment: How Did They Compare with Those Used in School?	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Identical or almost so	155	49.8	182	52.8	265	56.7	604	53.5
Little real difference	122	39.2	132	38.3	161	34.5	418	37.0
Very much different	34	11.0	31	8.9	41	8.8	107	9.5
If Very Much Different, How Long Did It Take to Learn?								
Only about a few weeks	13	39.4	10	37.0	3	43.6	41	41.0
Less than three months	6	18.2	5	18.5	17	23.1	20	20.0
About three to six months	8	24.2	6	22.2	9	7.7	17	17.0
About six months to a year	0	0.0	3	11.1	3	12.8	8	8.0
More than a year	6	18.2	3	11.1	5	12.8	14	14.0

For the combined years, only 9.5 percent of the graduates reported very much difference in tools and equipment; 37.0 percent reported little real difference and 53.5 percent reported essentially no difference. The percentages would no doubt vary among the trades. Nevertheless, if the graduates are acceptable as judges, the conclusion must be that there is no serious lack of comparability in terms of tools and equipment.

Of those who reported very much difference, 41.0 percent indicated that it took only a few weeks to learn what even was very much different. An additional 20 percent indicated that relearning or new learning required less than three months. Only 3.5 percent of all graduates whose first job was in the trade studied, required more than six months to learn what was very much different. Thus, even where there is a lack of comparability, the relearning or new learning problem from the standpoint of numbers appears to be negligible.

Not only is the tool and equipment comparability problem negligible, but the trend is toward even greater comparability. Almost 57 percent of the 1962 graduates reported tools and equipment the same or essentially the same against 50 percent of the 1953 graduates.

Work Methods

It can be expected that there will be considerable difference in work methods used in school with methods used in the trade. The competitive facts of life, with emphasis on productive output and quality, would necessarily make for differences. Table 81 indicates how the graduates compared the methods.

Fully one-third of the graduates reported there was very much difference in work methods in school and on the job; 49.1 percent reported little real difference, and 28.4 percent reported no difference. In work methods, then, there appears to be a substantial, albeit perhaps necessary, lack of comparability. How much of a problem does the lack of comparability represent?

Of those who reported very much difference in work methods, 43.1 percent reported it took them only a few weeks to learn whatever was very much different. An additional 26.6 percent claimed it took them less than three months, and 11.9 percent claimed it required from three to six months. Only 18.3 per cent claimed it required more than six months of relearning or new learning.

Table 81. WORK METHODS: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY YEAR OF GRADUATION

Work Methods: How Did They Compare with Those Used in School?	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Identical or almost so	83	26.5	87	25.6	149	32.1	319	28.4
Little real difference	159	50.8	166	48.8	221	47.6	551	49.1
Very much different	71	22.7	87	25.6	94	20.3	253	22.5
If Very Much Different, How Long Did It Take to Learn?								
Only about a few weeks	29	43.3	27	36.5	37	48.7	94	43.1
Less than three months	14	20.9	24	32.4	20	26.3	58	26.6
About three to six months	9	13.4	7	9.5	10	13.2	26	11.9
About six months to a year	6	9.0	5	6.8	5	6.6	16	7.3
More than a year	9	13.4	11	14.9	4	5.3	24	11.0

That 18.3 percent represents 3.5 percent of the total number of graduates whose first job was in the trade studied. One can conclude that the lack of comparability in work methods reported by one-third of the graduates does not constitute a serious relearning problem. Apparently the basics have been learned well enough so as to permit method differences to be relatively quickly overcome.

Work Materials

Table 82 indicates how graduates compared the materials used on their first job in the trade with the materials used in school. For the combined years, only 16.1 percent claimed the materials used on the job were very much different from those used in school; 38.1 percent said there was little real difference, and

45.8 percent indicated there was no difference. As in the case of tools and equipment and work methods, the trend is toward even greater comparability. Over the three graduating class years, the percentage of graduates reporting no difference has increased consistently, and the percentage reporting very much difference has decreased. Thus, what appears a minor problem from a quantitative viewpoint is becoming even more so.

Of those who reported very much difference in work materials for the combined graduates, 51.3 percent indicated that it took only a few weeks to learn whatever was very much different. An additional 22.1 percent claimed it took less than three months. Less than 14 percent claimed the lack of comparability required more than six months of additional learning. That 14 percent represents less than 3 percent of those whose first job was in the trade studied.

Table 82. WORK MATERIALS: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY YEAR OF GRADUATION

Work Materials: How Did They Compare with Those Used in School?	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Identical or almost so	130	42.5	152	45.0	227	49.1	509	45.8
Little real difference	124	40.5	128	37.9	168	36.4	424	38.1
Very much different	52	17.0	58	17.1	67	14.5	179	16.1
If Very Much Different, How Long Did It Take to Learn?								
Only about a few weeks	25	52.1	23	47.9	31	55.4	79	51.3
Less than three months	8	16.7	10	20.8	14	25.0	34	22.1
About three to six months	7	14.6	6	12.5	5	8.9	18	11.7
About six months to a year	3	6.3	2	4.2	1	1.8	6	3.9
More than a year	5	10.4	7	14.6	5	8.9	17	11.0

COMPARABILITY ANALYSIS BY TYPE OF SCHOOL

How do vocational schools compare with comprehensive schools in terms of (1) comparability of equipment, methods and materials used on the graduates' first job and those used in school, and (2) the time required by graduates to relearn where there is a lack of comparability?

To simplify the comparison, a weight average comparability score was calculated for each of the three items of comparison as follows: (1) A weight of 3,2 and 1 was assigned respectively to the categories of "identical or almost so," "little real difference," and "very much different." (2) The number of cases in each category was multiplied by the category weight. (3) The sum of the products was divided by the total number of cases. The same procedure was applied to the second portion of the data, the time required to learn whatever was very much different. Weights of 1 through 5 were assigned to the answer categories, the greater weight going to the "more than a year" category. Both percentage and weighted average data are presented.

Tools and Equipment

Table 83 presents the data for the two types of schools in terms of percentage responses for tools and equipment. There does not appear to be a significant difference in tool and equipment comparability for the two types of schools. The comparability score, described earlier, was 2.4 for vocational schools and 2.4 for comprehensive schools.

Of those who reported very much difference in tools and equipment used in the school and used on the first job, the percentages for time required to relearn suggest there is no difference between the two types of schools. The weighted average time required score was again 2.4 for vocational schools and 2.4 for comprehensive, indicating no difference.

Table 83. TOOLS AND EQUIPMENT: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY TYPE OF SCHOOL

Tools and Equipment: How Did They Compare with Those Used in School?	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Identical or almost so	427	55.1	177	50.0
Little real difference	269	34.7	149	42.1
Very much different	79	10.2	28	7.9
Weighted Mean . . .	2.45		2.42	
If Very Much Different, How Long Did It Take to Learn?				
Only about a few weeks	31	40.8	10	41.7
Less than three months	16	21.1	4	16.7
About three to six months	12	15.8	5	20.8
About six months to a year	7	9.2	1	4.2
More than a year	10	13.2	4	16.7
Weighted Mean	2.36		2.38	

Work Methods

Table 84 presents the data for the two types of schools in terms of work methods. There does not appear to be any significant difference in work method comparability as reported by the graduates of the two types of schools. The work method comparability score for vocational schools was 2.1; for comprehensive schools, 2.1.

Of those who reported very much difference in work methods, the time required to learn what was different was the same for both types of schools. The weighted average time required score was 2.1 for vocational schools, and 2.1 for comprehensive schools.

Table 84. WORK METHODS: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY TYPE OF SCHOOL

Work Methods: How Did They Compare with Those Used in School?	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Identical or almost so	218	28.4	101	28.5
Little real difference	368	47.9	183	51.5
Very much different	182	23.7	71	20.0
Weighted Mean . . .	2.05		2.08	
If Very Much Different, How Long Did It Take to Learn?				
Only about a few weeks	62	39.2	32	53.3
Less than three months	47	29.7	11	18.3
About three to six months	21	13.3	5	8.3
About six months to a year	11	7.0	5	8.3
More than a year	17	10.8	7	11.7
Weighted Mean . . .	2.09		2.07	

Work Materials

Table 85 presents the data for the two types of schools in terms of work materials. Again, there does not appear to be any significant difference in work material comparability as reported by the graduates of vocational and comprehensive schools. The comparability score for vocational schools was 2.3 versus 2.3 for comprehensive schools.

Of those who reported very much difference in work materials used in school and used on the first job, the percentages for time required to relearn, over all categories, suggest no difference between the two types of schools. The conclusion is confirmed by the weighted average time required

Table 85. WORK MATERIALS: COMPARABILITY ANALYSIS AND TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT BY TYPE OF SCHOOL

Work Materials: How Did They Compare with Those Used in School?	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Identical or almost so	356	46.6	153	40.0
Little real difference	282	36.9	142	40.8
Very much different	126	16.5	53	19.2
Weighted Mean . . .	2.30		2.29	
If Very Much Different, How Long Did It Take to Learn?				
Only about a few weeks	51	47.7	28	59.6
Less than three months	27	25.2	7	14.9
About three to six months	11	10.3	7	14.9
About six months to a year	5	4.7	1	2.1
More than a year	13	12.1	4	8.5
Weighted Mean . . .	2.08		1.86	

to learn what was different. It was 2.0 for the vocational schools and 1.9 for the comprehensive schools.

Thus, the comparability of tools and equipment, work methods, and work materials reported by graduates of vocational schools is no different from that reported by graduates of comprehensive schools. Furthermore, where substantial lack of comparability is reported, the graduates of both types of schools take about the same time to learn whatever is very much different in equipment, methods and materials.

COMPARABILITY ANALYSIS BY ENROLLMENT

Does the size of the school enrollment make a difference in (1) comparability of equipment, methods and materials used on the graduate's first job and those used in school, and (2) the time required to relearn where there is a lack of comparability? To simplify the comparison of schools with enrollments less than 500, between 500 and 1500, and more than 1500, weighted average comparability scores and time required to relearn scores were calculated for each enrollment category for tools and equipment, work methods and work materials. The results are shown in Table 86.

Table 86. COMPARISON OF SCHOOL ENROLLMENT CATEGORIES IN TERMS OF WEIGHTED AVERAGE SCORES OF COMPARABILITY OF EQUIPMENT, METHODS AND MATERIALS AND OF TIME REQUIRED TO LEARN WHAT WAS VERY MUCH DIFFERENT

Comparability Between School Use and First Job Use	School Enrollment		
	< 500	500-1500	> 1500
Tools and equipment	2.5	2.4	2.4
Work methods	2.1	2.1	2.0
Work materials	2.3	2.3	2.3
Time Required to Learn What Was Very Much Different			
Tools and equipment	2.5	2.2	2.3
Work methods	2.2	2.2	2.1
Work materials	2.2	1.9	1.9

There are no significant differences between graduates of large, medium, and small enrollment schools, as defined in this study, in terms of mean equipment, methods, and materials comparability scores, and mean time required to relearn what was "very much different." The conclusion is that school enrollment is not a variable influencing school-job comparability of equipment, methods, and materials, and time required to relearn what is found to be "very much different" by a small minority of graduates.

* * * * * * *

The comparability analysis by the race of graduates is not reported because too few Negro graduates obtained their first job in the same trade studied to warrant the analysis.

* * * * * * *

The data presented in this chapter suggest that differences between school and job equipment, methods, and materials are not looked upon as "very much different" by the vast majority of vocational school graduates, and the small minority that does report considerable differences required relatively little time to learn what is substantially different. These generalizations do not argue against the need in individual schools for more modern equipment, improvements in trade-oriented work methods, and greater use of the types of materials used in the trades. They do raise a question about a massive effort to re-equip vocational shops across the country on the grounds that graduates are inadequately prepared for the trades because of obsolescent equipment, antiquated work methods, and substitute materials. The facts are to the contrary.

7

ASSESSMENT OF SKILL ORIGINS AND REQUIREMENTS

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CHAPTER 7 SUMMARY

Introduction to the Assessment Problem

1. Alternative methods of assessment. Four alternatives for assessing how much trade skills vocational graduates have learned in high school are briefly discussed. They include test measurement of trade skills, opinions of shop instructors, opinions of employers, and opinions of graduates. The latter was the only practical alternative for the study.

Importance of Basic Trade Skills

2. Year of graduation. The importance attached to different basic trade skills changes with years of experience in the trade. In general, the importance rating of trade skills increases with trade experience. The three skills rated to be most important by all graduates are manual job skills, practical job knowledge, and theoretical job knowledge. Skills related to supervisory responsibilities increased in importance with trade experience.

3. Type of school. There is no significant difference in the importance ratings attached to basic trade skills between graduates of vocational and comprehensive schools.

4. School enrollment. In general, the importance attached to basic trade skills is unrelated to the enrollment of the schools from which the graduates came.

Amount of Skill Learned in High School

5. Year of graduation. The amount of basic trade skills acknowledged by graduates to have been learned in high school decreases with years out of school. Graduates of all years do acknowledge having learned a very substantial amount of trade skills in high school. The three skills learned most in high school are mathematical, manual, and theoretical job skills. The three skills learned least in high school are supervisory, clerical, and personal relations skills.

6. Type of school. There is no significant difference between vocational and comprehensive school graduates in terms of the amount of basic trade skills they claim they have learned in high school.

7. School enrollment. The larger the enrollment of the graduates' former high school, the less graduates acknowledge learning of basic trade skills in high school. Alternative interpretations are offered.

(Continued in Appendix B)

INTRODUCTION TO THE ASSESSMENT PROBLEM

A comprehensive assessment of the vocational education process would be incomplete if it by-passed the knotty problem of determining the degree to which the schools provide the knowledges and skills required by the trades taught. In principle, there are several approaches to the assessment problem. A brief discussion of the alternatives will set the stage for what follows.

Measurement of Trade Skills

Perhaps the ideal approach would be to have standardized instruments for measuring how much of required trade knowledges and skills were acquired by graduates by the end of their formal trade training. With appropriate norms, such trade examinations, whether of a paper and pencil type or a performance type or even a combination, would be used to compare the effectiveness of trade training among schools. Unfortunately, there were no such instruments. And even had there been some, their use would have been beyond the capability of the present survey.

Opinions of School Personnel

Shop instructors, because of their familiarity with trade knowledge and skill requirements and acquaintance with how much of these requirements they are able to impart to their students in the time available, could be the basis of evaluating how much students learn of what is required. Ratings of graduates in terms of the major dimensions of trade knowledge and skill requirements could be obtained from instructors. Such ratings would undoubtedly be useful for obtaining a generalized picture of acquired knowledges and skills. The principal disadvantage is that such ratings are to a large extent self-ratings. There might be an understandably strong leaning in the direction of claiming a satisfactory amount of acquired trade skill for one's own students.

Opinions of Employers

A third approach would be to solicit the opinions of employers or, better yet, supervisors of graduates who work in the trade. Supervisors should know at least generally the trade knowledge and skill requirements. Given an instrument for assessing the trade knowledge and skills demonstrated by recent graduates, supervisors could undoubtedly be a basis for obtaining a picture of how much the graduate has learned. The practical problems associated with contacting employers and obtaining assessments of recent graduates from supervisors made this approach unsuitable for the present survey.

Opinions of Graduates

A fourth approach to the problem of assessing how much vocational course graduates have learned of required trade skills and knowledges is to ask the graduates currently working in the trades studied or highly related trades. This approach too has some serious limitations. The graduate is asked to recall, in effect, the state of his trade skill acquisition at the time he left high school. In the present survey, recall means an assessment of trade knowledges and skills as far back as eleven years ago for the class of 1953.

Moreover, if graduates are asked to assess the vocational knowledges and skills they acquired in high school at the time of graduation, they must do so without the benefit of trade experience. This, too, is a disadvantage.

Practical considerations determined that the survey would solicit the opinions of graduates about vocational knowledges and skills acquired in high school despite the aforementioned disadvantages. The graduates were asked four questions with respect to nine basic skill areas: (1) How important is the skill for your present job? (2) How much of the skill was learned in high school? (3) Where did you learn most about the skill? (4) Do you feel the need for more training in this skill area?

* * * * * * *

The analyses which follow concern the answers to the above four questions as they are related to such basic variables as year of graduation, type of school attended, and enrollment of school attended.

THE IMPORTANCE OF BASIC TRADE SKILLS

Introduction

The graduates were asked to rate the importance of nine basic knowledges and skills for their present job. The nine skill categories were:

1. Manual job skills
2. Practical job knowlege
3. Theoretical job knowlege
4. Mathematical skills
5. Communication skills
6. Reading and interpretive skills
7. Clerical skills
8. Personal relations skills
9. Supervisory skills

The nine categories are defined on the questionnaire exhibits shown in Chapter 1. The rating categories were: (1) of no real importance, (2) of slight importance, (3) of considerable importance, and (4) of critical importance.

The ratings were intended to shed light on what was regarded as important in the different trades; whether judgments of importance varied with years of experience in the trades; whether graduates of vocational and comprehensive schools differed in importance ratings; and whether graduates of small, medium and large enrollment schools differed in such ratings. The analysis of the rated importance of the aforementioned skills by the individual trades has been omitted because of a decision to drop the trades as an independent variable for reason of insufficient budget. Additional funding may yet make analysis by trades possible.

Analysis by Year of Graduation

Do graduates with varying years of experience in the trades differ in the importance they attach to the basic skills? Which skills, if any, show the greatest differences? Which skills are relatively unaffected, in judged importance, by increased years of experience in the trades? Lastly, what is the relative importance of the skills for all graduates? Table 87 presents the data.

Table 87. IMPORTANCE OF BASIC SKILLS: MEAN RATINGS BY YEAR OF GRADUATION
(Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated by Graduates *	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
Manual job skills	357	3.4	.72	526	3.3	.80	703	3.3	.83	1592	3.4	.79
Practical job knowledge	350	3.4	.63	513	3.3	.72	674	3.3	.72	1543	3.3	.70
Theoretical job knowledge	346	3.4	.68	502	3.3	.75	650	3.3	.76	1503	3.3	.74
Mathematical skills	352	3.1	.90	507	3.0	.92	667	2.9	.99	1532	3.0	.95
Communication skills	352	3.0	.93	505	2.9	.99	666	2.8	1.01	1528	2.9	.99
Reading & interpretive skills	348	3.4	.84	511	3.3	.91	667	3.2	.96	1531	3.3	.92
Clerical skills	349	2.5	1.06	509	2.4	1.02	655	2.2	1.05	1519	2.4	1.05
Personal relations skills	347	3.1	.92	507	3.1	.92	669	2.9	.96	1529	3.0	.94
Supervisory skills	347	3.0	.98	504	2.8	1.01	654	2.5	1.02	1511	2.7	1.03
IMPORTANCE INDEX	9	3.14	-	9	3.04	-	9	2.93	-	9	3.03	-

* 4 = Of critical importance; 3 = Of considerable importance; 2 = Of slight importance
1 = Of no real importance

The importance index, which is simply the mean of the mean ratings given the individual skills, increases from 2.93 for 1962 graduates to 3.04 for 1958 graduates, and further to 3.14 for 1953 graduates. The trend establishes that, in general, the importance that vocational graduates attach to these basic skills increases with increased years of experience in the trade. The reason for the increased importance attached to the skills probably has to do with the greater responsibilitites that the older gradustes have on their jobs.

There is, for example, a substantial difference in the importance that 1953 and 1962 graduates attached to supervisory skills. This is probably because the former have greater need for such skills as a result of broader responsibilities. They have more likely reached positions where supervisory responsibilities are involved.

The changes in importance attached to individual skills with increased years of experience in the trade are of interest. Manual job skills, practical job knowledge and theoretical job knowledge show relatively little increase in rated importance. That is partly because the rated importance of these skills and knowledge areas are very high within two years after graduation. The two skills that show the greatest gain in rated importance are supervisory skills and clerical skills. Undoubtedly, this is a reflection of an increase in supervisory and clerical responsibilities with increased years in the trade. Communication skills, reading and interpretive skills, mathematical skills and personal relation skills also show a consistent increase in rated importance with increased years in the trade.

The relatively small differences in the rated importance of some of the skill areas between the 1953, 1958 and 1962 graduates should not be interpreted to mean that the differences would be small for all trades. For some trades, the need for mathematical skills does not necessarily increase with years of trade experience. Indeed, for some trades, there is relatively little need for mathematical skills. Commercial cooking and tailoring are examples. The trends reflected in Table 87 reflect to some extent the flattening effect when individual trade trends cancel out each other as a result of being combined. Of more practical significance to the educator, would be trends of importance ratings in terms of specific trades. The data are available, but unanalyzed on data tapes.

Independent of the experience factor, what is the relative importance of the basic skills, for all trades combined? The skills are listed below in rank order of mean rated importance for the combined year of graduation groups.

1. Manual job skills 3.4
2. Practical job knowledge 3.3
3. Theoretical job knowledge . . . 3.3

4. Reading-interpretive skills	3.3
5. Mathematical skills	3.0
6. Personal relations skills	3.0
7. Communication skills	2.7
8. Supervisory skills	2.7
9. Clerical skills	2.4

Manual job skills were rated the most important. The 3.4 mean rating is almost midway between "of critical importance" and "of considerable importance." The range of the three mean ratings obtained for this skill from the three year of graduation groups was from 3.3 to 3.4. Clearly, manual job skills are rated of very high importance by graduates from two to eleven years in the trade studied or highly related trades. The same is true for practical job knowledge. These findings have a bearing on current thinking, already widespread, that manual job skills and specific trade-related practical knowledge should be de-emphasized in favor of more generalized training. In view of the importance attached to manual skills and practical job knowledge by those in the trades, should such skills be de-emphasized in basic vocational training? What problems will arise in employer acceptance of vocational graduates if practical job knowledge and manual skills are de-emphasized?

It is interesting to see that theoretical job knowledge has as high an importance rating as practical job knowledge. The graduate is already aware of the importance of basic trade principles and concepts. However, this too may be at variance with the thinking that persons should be trained generally, for a family of related trades rather than for specific trades. Will the graduate of such generalized training have sufficient theoretical job knowledge for a specific trade? If not, where is he expected to get such theoretical knowledge?

The importance of reading and interpretive skills, mathematical skills, and personal relations skills is acknowledged. All have a mean rating of 3.0 or more, indicating they are regarded as of considerable importance. A later section will indicate to what extent the schools are providing these skills, in the opinion of graduates.

Of least importance, relatively, are communication skills, supervisory skills and clerical skills. The latter two in particular grow in importance with increasing years in the trade. However, they do not reach the importance attached to manual job skills and practical job knowledge by the 1962, 1958 or 1953 graduates. This is wholly consistent with the relatively litte emphasis that schools put on these skill areas during the high school period.

Table 88 presents the number and percentage of graduates in each response category for the basic skills. The data is the basis for the mean ratings presented in Table 87.

The percentage values confirm the growth of the importance of the skills with experience. Whereas, 20.3 percent of 1962 graduates claimed supervisory skills were "of critical importance," 36 percent of the 1953 graduates so rated the skill, a gain of 16 percent. Comparable gains were 10 percent for personal relations skills, 8 percent for clerical skills, 8 percent for interpretive skills, and 7 percent for communication skills. There is no question but that as experience in the trades increase, the need for such skills increases.

Analysis by Type of School

How do graduates of vocational and comprehensive schools compare in terms of the importance ratings given to the basic skills? Table 89 presents the data.

There is no overall difference in the skill ratings of importance by the graduates of the two types of schools. Differences between individual items are not significant. Had there been substantial or significant differences, a plausible interpretation would be that the higher the rating of importance, the greater the felt need for greater skill. This would have reflected on the adequacy of the underlying training. No such interpretation is necessary.

Table 88. IMPORTANCE OF BASIC SKILLS: PERCENTAGE BY RESPONSE CATEGORY BY YEAR OF GRADUATION

(Based on graduates in the trade or in highly related trades)

Knowledge or Skill Rated By Graduates In Same or Highly Related Trade	Year of Graduation	IMPORTANCE OF SKILL RATING: Of No Real Importance		Of Slight Importance		Of Much Importance		Of Critical Importance	
		N	%	N	%	N	%	N	%
Manual job skills	1953	11	3.1	15	4.2	142	39.8	189	52.9
	1958	23	4.4	38	7.2	198	37.6	267	50.8
	1962	37	5.3	53	7.5	263	37.4	350	49.8
	Combined	71	4.5	107	6.7	604	37.9	810	50.9
Practical job knowledge	1953	4	1.1	15	4.3	160	45.7	171	48.9
	1958	10	1.9	46	9.0	216	42.1	241	47.0
	1962	16	2.4	53	7.9	310	46.0	295	43.8
	Combined	30	1.9	114	7.4	692	44.8	707	45.8
Theoretical job knowledge	1953	7	2.0	20	5.8	158	45.7	161	46.5
	1958	13	2.6	50	10.0	219	43.6	220	43.8
	1962	19	2.9	66	10.2	292	44.9	273	42.0
	Combined	39	2.6	137	9.1	673	44.8	654	43.5
Mathematical skills	1953	18	5.1	76	21.6	121	34.4	137	38.9
	1958	41	8.1	102	20.1	196	38.6	168	33.1
	1962	66	9.9	156	23.4	209	31.3	236	35.4
	Combined	126	8.2	335	21.9	529	34.5	542	35.4
Communication skills	1953	25	7.1	73	20.7	121	34.4	133	37.8
	1958	54	10.7	103	20.4	173	34.2	175	34.6
	1962	89	13.4	136	20.4	237	35.6	204	30.6
	Combined	170	11.1	312	20.4	534	34.9	512	33.5
Reading and interpretive skills	1953	18	5.2	28	8.0	95	27.3	207	59.5
	1958	37	7.2	43	8.4	146	28.6	285	55.8
	1962	54	8.1	93	13.9	179	26.8	341	51.1
	Combined	109	7.1	165	10.8	424	27.7	833	54.4
Clerical skills	1953	73	20.9	103	29.5	93	26.6	80	22.9
	1958	109	21.4	179	35.2	125	24.6	96	18.9
	1962	208	31.8	196	29.9	154	23.5	97	14.8
	Combined	391	25.7	478	31.5	377	24.8	273	18.0
Personal relations skills	1953	21	6.1	63	18.2	113	32.6	150	43.3
	1958	40	7.9	79	15.6	192	37.9	196	38.7
	1962	68	10.2	127	19.0	250	37.4	224	33.5
	Combined	129	8.4	270	17.7	557	36.4	573	37.5
Supervisory skills	1953	37	10.7	63	18.2	122	35.2	125	36.0
	1958	68	13.5	110	21.8	173	34.3	153	30.4
	1962	129	19.7	181	27.7	211	32.2	133	20.3
	Combined	234	15.5	355	23.5	510	33.8	412	27.3

Table 89. IMPORTANCE OF BASIC SKILLS: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS IN TERMS OF MEAN RATINGS
(Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated By Graduates *	TYPE OF SCHOOL					
	Vocational			Comprehensive		
	N	M	S.D.	N	M	S.D.
Manual job skills	1042	3.4	.78	550	3.3	.81
Practical job knowledge	1013	3.4	.70	530	3.3	.71
Theoretical job knowledge	988	3.3	.74	515	3.2	.74
Mathematical skills	1000	2.9	.96	532	3.0	.94
Communication skills	998	2.9	.97	530	2.8	1.02
Reading and interpretive skills .	1002	3.3	.91	529	3.2	.95
Clerical skills	996	2.3	1.05	523	2.4	1.04
Personal relations skills	999	3.0	.93	530	3.0	.96
Supervisory skills	985	2.7	1.02	526	2.7	1.03

* 4 = Of critical importance; 3 = Of considerable importance
2 = Of slight importance; 1 = Of no real importance

Analysis by School Enrollment

How do graduates of small, medium and large enrollment schools, as herein defined, compare in terms of the importance attached to the basic skills? The question was raised on the hypotheses that differences in importance ratings may reflect differences in felt need for additional skill, and thereby indirectly reflect upon the adequacy of past training. Table 90 provides the data.

There is only one consistent trend among the importance ratings of the basic skill areas. The graduates of large enrollment schools attach less importance to communication skills than do the graduates of medium and small enrollment schools. Application of the previously mentioned hypotheses would suggest that graduates of small enrollment school feel a greater need for communication skills (because they attach more importance to such skills), and therefore,

Table 90. IMPORTANCE OF BASIC SKILLS: COMPARISON OF TOTAL SCHOOL ENROLLMENT CATEGORIES IN TERMS OF MEAN RATINGS

(Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated By Graduates *	SCHOOL ENROLLMENT								
	< 500			500-1500			> 1500		
	N	M	S.D.	N	M	S.D.	N	M	S.D.
Manual job skills	600	3.4	.76	551	3.3	.84	441	3.4	.78
Practical job knowledge	582	3.4	.68	532	3.3	.70	429	3.3	.72
Theoretical job knowledge	567	3.4	.70	520	3.3	.76	416	3.3	.75
Mathematical skills	578	3.0	.94	524	3.0	.96	430	3.0	.95
Communication skills	577	3.0	.96	524	2.9	1.00	427	2.8	1.00
Reading & Interpretive skills	579	3.3	.90	524	3.3	.95	428	3.2	.92
Clerical skills	573	2.4	1.06	524	2.3	1.02	422	2.3	1.06
Personal relations skills	576	3.1	.92	526	3.0	.93	427	3.0	.98
Supervisory skills	567	2.8	1.01	519	2.7	1.05	425	2.7	1.02

* 4 = Of critical importance; 3 = Of considerable importance; 2 = Of slight importance; 1 = Of no real importance

received less adequate training in this skill area than did graduates from medium or large enrollment schools.

The importance ratings of other skill areas appear to be unrelated to school enrollment. The enrollment of the school attended has no influence on the rated importance of skills.

AMOUNT OF SKILL LEARNED IN HIGH SCHOOL

Introduction

The same nine basic knowledges and skills discussed earlier were rated by the graduates in terms of how much they learned about each in high school. The categories for the rating were: (1) almost nothing, (2) some but not much, (3) a large amount, and (4) almost all. For analysis purposes, the ratings were assigned values of 1, 2, 3, and 4 respectively to obtain mean ratings.

It should be pointed out once again that the graduates of 1962, 1958 and 1953 were asked to assess how much of each skill was learned in high school two, six and elven years respectively after graduation. Clearly, the method of assessing what has been learned in high school about these basic skills leaves much to be desired. There was no practical alternative.

Despite their admitted limitations, such ratings may suggest areas of training weakness, particularly if the findings corroborate in part what is already known or suspected to be the case.

Analysis by Year of Graduation

Do the graduates of 1953, 1958 and 1962 differ in terms of the overall amount of trade knowledges and skills that, in their opinion, they have learned in high school? Are there trends in the mean ratings of amount of skill learned in high school among the individual skills? Table 91 provides the data.

The amount learned index, which is simply a mean of the individual mean ratings, increases from 2.49 for the 1953 graduates to 2.55 for the 1958 graduates to 2.69 for 1962 graduates. The trend raises a problem of interpretation. One interpretation is that the 1962 graduates learned more of the basic skills than those of 1958 or 1953. A second interpretation is

Table 91. AMOUNT OF SKILL LEARNED IN HIGH SCHOOL: RATINGS BY YEAR OF GRADUATION

(Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated As To The Amount Learned In High School *	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
▲Manual job skills	357	2.8	.76	519	2.9	.72	695	3.0	.76	1577	2.9	.75
Practical job knowledge	351	2.6	.74	508	2.6	.74	670	2.8	.77	1535	2.7	.76
▲Theoretical job knowledge	346	2.8	.79	492	2.9	.79	646	3.0	.81	1489	2.9	.80
▲Mathematical skills	348	3.0	.86	499	3.1	.86	653	3.2	.86	1506	3.1	.86
Communication skills	349	2.8	.81	495	2.8	.84	650	2.8	.90	1499	2.8	.86
Reading & interpretive skills	347	2.8	.83	499	2.8	.88	656	2.9	.92	1507	2.8	.89
Clerical skills	344	1.9	.90	495	1.9	.86	643	2.2	.97	1488	2.0	.93
▲Personal relations skills	339	2.0	.87	496	2.2	.89	653	2.3	.92	1494	2.2	.91
▲Supervisory skills	338	1.7	.82	491	1.8	.82	635	2.0	.92	1470	1.9	.88
AMOUNT LEARNED INDEX	9	2.49	-	9	2.55	-	9	2.69	-	9	2.59	-

* 4 = Almost all; 3 = Large amount; 2 = Some but not much; 1 = Almost nothing

that the more recent graduates are more generous in the learning they attribute to their former high schools. A third interpretation is that the older graduates have learned more of these skills since leaving high school, and therefore, attribute less learning of the skills to their former high schools. No conclusive interpretation can be made.

The skills marked with upward pointing arrows are those which show a consistent trend of higher mean ratings for 1953, 1958 and 1962 respectively. They include manual job skills, theoretical job knowledge, mathematical skills, personal relations skills, and supervisory skills. All skills, with the exception of communication skills, have higher amount learned ratings from the 1962 graduates than from the 1953 graduates. A conclusive interpretation is not possible.

One point is conclusive. Graduates do feel that they have learned a fair amount of these skills in high school. The skills are listed below in rank order of the mean rating of amount learned in high school. The mean ratings are based upon the combined graduates.

1. Mathematical skills 3.1
2. Manual job skills 2.9

3.	Theoretical job knowledge	2.9
4.	Communication skills	2.8
5.	Reading and interpretive skills	2.8
6.	Practical job knowledge	2.7
7.	Personal relations skills	2.2
8.	Clerical skills	2.0
9.	Supervisory skills	1.9

All but three of the basic skills have mean amount-learned-in-high school ratings of 2.7 or more. A rating of 3.0 is the equivalent of having learned, in the graduate's opinion, a "large amount" in high school. Mathematical skills. manual job skills and theoretical job knowledge head the list in that order. Personal relations skills, clerical skills, and supervisory skills were rated 2.2 and lower, indicating some but not much of these skills were learned in high school. This is understandable. Relative to the other basic skills, schools do not put much emphasis on the latter skills. It is interesting to note that practical job knowledge ranked fourth from the bottom with a mean rating of 2.7. This suggests a large amount of practical job knowledge is learned after graduation on the job.

The mean ratings of the amount of each skill learned in high school support the technique of using graduate opinions to assess how much of skills are learned in high school. The ratings are consistent, in a relative way, with what should be the case based upon what is known about what schools emphasize.

Table 92 presents the percentage of graduates by skill and response category. The differences between the graduating class years are most noticeable in the extreme categories, particularly the "almost all" category.

Some of the combined percentages are revealing. Seventy-nine percent of the 1962 graduates claimed they learned a "large amount" or "almost all" of their manual job skills in school. Comparable percentages for the other basic skills are:

1.	Practical job knowledge	68.8
2.	Theoretical job knowledge	75.4
3.	Mathematical skills	78.6

Table 92. AMOUNT OF SKILL LEARNED IN HIGH SCHOOL: PERCENTAGE BY RESPONSE CATEGORY BY YEAR OF GRADUATION

(Based on graduates in the trade or in highly related trades)

Knowledge or Skill Rated By Graduates In Same or Highly Related Trade	Year of Graduation	AMOUNT OF SKILL LEARNED IN HIGH SCHOOL							
		Almost Nothing		Some, But Not Much		Large Amount		Almost All	
		N	%	N	%	N	%	N	%
Manual job skills	1953	20	5.6	90	25.2	191	54.9	51	14.3
	1958	20	3.8	114	22.0	299	57.6	86	16.6
	1962	31	4.5	114	16.4	386	55.5	164	23.6
	Combined	71	4.5	318	20.2	885	56.1	303	19.2
Practical job knowledge	1953	29	8.3	121	34.5	176	50.1	25	7.1
	1958	29	5.7	179	35.2	250	49.2	50	9.8
	1962	39	5.8	170	25.4	360	53.7	101	15.1
	Combined	97	6.3	470	30.6	791	51.5	177	11.5
Theoretical job knowledge	1953	21	6.1	75	21.7	186	53.8	64	18.5
	1958	22	4.5	121	24.6	242	49.2	107	21.7
	1962	29	4.5	130	20.1	308	47.7	179	27.7
	Combined	72	4.8	327	22.0	739	49.6	351	23.6
Mathematical skills	1953	16	4.6	75	21.6	137	39.4	120	34.5
	1958	19	3.8	101	20.2	179	35.9	200	40.1
	1962	29	4.4	111	17.0	246	37.7	267	40.9
	Combined	66	4.4	287	19.0	565	37.5	588	39.0
Communication skills	1953	19	5.4	100	28.6	162	46.4	68	19.5
	1958	34	6.9	146	29.5	218	44.0	97	19.6
	1962	54	8.3	156	24.0	274	42.2	166	25.5
	Combined	108	7.2	403	26.9	655	43.7	333	22.2
Reading and interpretive skills	1953	21	6.0	95	27.4	159	45.8	72	20.7
	1958	37	7.4	138	27.6	208	41.7	116	23.2
	1962	62	9.4	138	21.0	272	41.5	184	28.0
	Combined	120	8.0	372	24.7	640	42.5	375	24.9
Clerical skills	1953	130	37.8	138	40.1	51	14.8	25	7.3
	1958	172	34.7	222	44.8	70	14.1	31	6.3
	1962	190	20.5	225	35.0	160	24.9	68	10.6
	Combined	493	33.1	585	39.3	285	19.2	125	8.4
Personal relations skills	1953	111	32.7	126	37.2	87	25.7	15	4.4
	1958	127	25.6	190	38.3	144	29.0	35	7.1
	1962	150	23.0	233	35.7	208	31.9	62	9.5
	Combined	388	26.0	550	36.8	444	29.7	112	7.5
Supervisory skills	1953	177	52.4	109	32.2	40	11.8	12	3.6
	1958	204	41.5	190	38.7	81	16.5	16	3.3
	1962	211	33.2	230	36.2	148	23.3	46	7.2
	Combined	593	40.4	531	36.1	271	18.4	71	5.1

4. Communication skills	67.7
5. Reading-interpretive skills	69.9
6. Clerical skills	35.4
7. Personal relations skills	41.4
8. Supervisory skills	30.5

The above percentages are a reflection of how much of the skills present two years after graduation from high school are attributable to what was learned in high school.

Analysis by Type of School

How do the graduates of vocational and comprehensive schools compare in terms of the amount of the basic skills that they claim they learned in high school? Differences would presumably reflect school differences in effectiveness of training in the skills. Table 93 presents the data.

Table 93. AMOUNT OF SKILL LEARNED IN HIGH SCHOOL: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS IN TERMS OF MEAN RATINGS
(Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated As To Amount Learned In High School *	TYPE OF SCHOOL					
	Vocational			Comprehensive		
	N	M	S.D.	N	M	S.D.
Manual job skills	1033	2.9	.75	544	2.8	.74
Practical job knowledge	1005	2.7	.76	530	2.7	.75
Theoretical job knowledge	978	3.0	.80	511	2.8	.79
Mathematical skills	986	3.1	.86	520	3.1	.87
Communication skills	984	2.8	.85	515	2.8	.88
Reading and interpretive skills	988	2.9	.90	519	2.8	.87
Clerical skills	979	2.0	.93	509	2.0	.92
Personal relations skills	976	2.2	.89	518	2.2	.94
Supervisory skills	960	1.8	.86	510	2.0	.91

* 4 = Almost all; 3 = Large amount; 2 = Some, but not much;
1 = Almost nothing

It does not appear that there is a significant overall difference in the amount of skills that vocational and comprehensive graduates claim they have learned in school. Of the individual skill differences, there is a suggestion that vocational school graduates learn more of theoretical job knowledge than comprehensive school graduates. The difference, however, is not impressive.

Analysis by School Enrollment

How do the graduates of small, medium and large enrollment schools, as defined in this study, compare in terms of the amount of the basic skills attributed to high school learning? Substantial differences would presumably reflect school differences in the effectiveness of training the trades. Table 94 presents the data.

Table 94. AMOUNT OF SKILL LEARNED IN HIGH SCHOOL: COMPARISON OF TOTAL SCHOOL ENROLLMENT CATEGORIES IN TERMS OF MEAN RATINGS (Based on graduates in the trade or in highly related trades)

Trade Knowledge or Skill Rated As To Amount Learned In High School *	SCHOOL ENROLLMENT								
	< 500			500-1500			> 1500		
	N	M	S.D.	N	M	S.D.	N	M	S.D.
Manual job skills	594	3.0	.77	546	2.9	.76	437	2.8	.71 ▼
Practical job knowledge	579	2.8	.76	529	2.7	.74	427	2.6	.77 ▼
Theoretical job knowledge	561	3.0	.80	518	2.9	.78	410	2.8	.82 ▼
Mathematical skills	568	3.2	.82	517	3.1	.86	421	3.0	.91 ▼
Communication skills	565	2.8	.84	516	2.9	.83	418	2.7	.92
Reading & interpretive skills	571	2.9	.88	515	2.8	.90	421	2.8	.88
Clerical skills	568	2.1	.94	508	2.0	.92	412	1.9	.91 ▼
Personal relations skills	562	2.2	.88	514	2.2	.90	418	2.1	.94
Supervisory skills	552	1.9	.89	503	1.9	.88	415	1.8	.88

* 4 = Almost all; 3 = Large amount; 2 = Some, but not much; 1 = Almost nothing

The downward pointing arrows at the right of the table indicate a consistent trend: the larger the school enrollment, the less graduates attribute learning of the skill to the school. Even where the trend is not consistent, the mean ratings for the small enrollment schools are without exception greater than those for the large enrollment schools.

The question is: Why? One interpretation is that the ratings suggest that students learn more about these skills in small enrollment schools than in large enrollment schools. There is also another interpretation. Students in small enrollment schools may have greater feelings of loyalty toward their schools than those from the very large schools because of their closer associations with school personnel, particularly instructors, and therefore, may be more generous in the learning they attribute to their schools. Chapter 8 provides data to rule out the latter interpretation. There is no significant difference in the overall attitude that graduates from small, medium and large schools have toward their former schools. If anything, there are indications that small school graduates have less favorable attitudes toward their former schools. Thus, the first interpretation seems more plausible, i.e. the larger the school enrollment, the less graduates have learned of the basic skills. It should be pointed out, however, that the differences are not substantial.

ANALYSIS OF ACKNOWLEDGED LEARNING MEASURE

Introduction

The two preceding sections analyzed the variables, rated importance of skills and rated amount of skills learned in high school. In Chapter 3, a derived measure was introduced that is the product of these two variables. The measure is acknowledged high school learning.

The measure is the mean of the products obtained by multiplying the rated amount of each skill learned in high school with its rated importance for the graduate's present job in the trade or a highly related trade. The measure reflects how much of the basic skills were learned in high school, when each skill is weighted by its importance rating. As such, it is a refinement of the assessment of how much of basic skills are learned in high school that was presented in the preceding section.

The measure is such that a maximum score of 16 means a graduate rated each skill of critical importance (4) and claimed he learned almost all of each skill (4) in high school. A minimum score of 1 means a graduate rated each skill of no importance for his present job (1) and claimed he learned nothing (1) of each skill in high school. Obviously, neither extreme score is probable or credible.

Because the measure is the interaction product of two equally weighted variables, it can not be interpreted in terms of the original rating categories. The higher the score, the more of the basic skills were learned in high school and regarded important for the graduate's present job. Up to the point where an extremely high score may call into question the credibility of the ratings, the higher the score on this measure, the better it reflects on the graduate's high school vocational education.

Analysis by Year of Graduation

How do the graduates of 1953, 1958, and 1962 compare in terms of the measure? Is there a significant trend? If so, what is the interpretation thereof? Table 95 shows a frequency, percentage and cumulative percentage distribution of the measure, for graduating classes of 1953, 1958, and 1962 separately and for all classes combined, together with mean and median values.

Table 95. ACKNOWLEDGED HIGH SCHOOL LEARNING: FREQUENCY DISTRIBUTION FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION
(Based on graduates in the trade or in highly related trades)

High School Learning	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	M	C%	N	M	C%	N	M	C%	N	M	C%
> 15.0	2	0.6	100.0	2	0.4	100.0	4	0.6	100.0	8	0.5	100.0
13.6-15.0	6	1.7	99.4	2	0.4	99.6	15	2.2	99.4	23	1.5	99.5
12.1-13.5	8	2.3	97.7	14	2.7	99.2	27	3.9	97.2	49	3.1	98.0
10.6-12.0	38	10.8	95.4	58	11.3	96.5	73	10.6	93.3	170	10.9	94.9
9.1-10.5	57	16.3	84.6	91	17.6	85.2	119	17.3	82.7	270	17.3	84.0
7.6- 9.0	88	25.1	68.3	137	26.6	67.6	191	27.8	65.4	417	26.8	66.7
6.1- 7.5	93	26.6	43.2	119	23.1	41.0	135	19.7	37.6	347	22.3	39.9
4.6- 6.0	40	11.4	16.6	72	14.0	17.9	84	12.2	17.9	197	12.6	17.6
3.1- 4.5	15	4.3	5.2	14	2.7	3.9	29	4.2	5.7	58	3.7	5.0
1.6- 3.0	3	0.9	0.9	6	1.2	1.2	6	0.9	1.5	15	1.0	1.3
1.0- 1.5	0	0.0	0.0	0	0.0	0.0	4	0.6	0.6	4	0.3	0.3
Number	350			515			687			1558		
Mean	8.2			8.1			8.3			8.2		
Median	8.0			8.1			8.2			8.1		
S.D.	2.29			2.2			2.5			2.36		

The mean values of the measure are 8.2, 8.1 and 8.3 respectively for 1953, 1958 and 1962 graduates. Thus, the measure shows no trend. This is explainable. The importance of skill ratings increased with years out of school.

The ratings of amount of skill learned in high school showed the opposite trend, i.e. claimed high school learning decreased with years out of school. The two trends cancelled each other out in the derived measure.

Proper application of the measure for trend analysis calls for deriving the measure from ratings from different year-of-graduation groups at the same time after graduation for each group. Thus, if the classes of 1953, 1958, and 1962 had provided their ratings two years after graduation, there would have been a basis for trend analysis uncomplicated by differential periods out of school. The study design made this type of analysis impossible.

Analysis by Type of School

How do comprehensive and vocational school graduates compare in terms of the acknowledged learning measure? Table 96 provides the comparison data for each year of graduation group.

Table 96. ACKNOWLEDGED HIGH SCHOOL LEARNING: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS
(Based on graduates in the trade or in highly related trades)

Year of Graduation	Type of School	High School Learning		
		N	M	S.D.
1953	Vocational	232	8.3	2.4
	Comprehensive	118	7.9	2.1
1958	Vocational	327	8.1	2.2
	Comprehensive	188	8.1	2.1
1962	Vocational	452	8.4	2.4
	Comprehensive	235	8.2	2.6
Combined	Vocational	1017	8.3	2.4
	Comprehensive	541	8.1	2.4

The 1953 and 1962 vocational school graduates have slightly higher mean scores on the measure than the comprehensive school vocational graduates. For the 1958 graduates, there is no difference between the graduates of the two types of schools. The prudent conclusion is that there is no difference between the two types of schools in terms of the amount of basic skills reported by graduates to have been learned in high school, when the skills are weighted by importance for present jobs in the trade or highly related trades.

Analysis by School Enrollment

How do graduates from small, medium and large enrollment schools compare in terms of the acknowledged learning measure, which takes into account the rated importance of the skill attributed to high school learning? Table 97 provides the data.

Table 97. ACKNOWLEDGED HIGH SCHOOL LEARNING: COMPARISON OF TOTAL SCHOOL ENROLLMENT CATEGORIES
(Based on graduates in the trade or in highly related trades)

Year of Graduation	School Enrollment	High School Learning		
		N	M	S.D.
1953	< 500	138	8.6	2.2
	500 - 1500	119	8.2	2.2
	> 1500	93	7.5	2.3
1958	< 500	187	8.4	2.2
	500 - 1500	189	8.1	2.2
	> 1500	139	7.8	2.2
1962	< 500	261	8.4	2.5
	500 - 1500	226	8.4	2.5
	> 1500	200	8.0	2.5
Combined	< 500	588	8.4	2.3
	500 - 1500	537	8.3	2.3
	> 1500	433	7.9	2.4

For each of the year of graduation groups, the graduates from small enrollment schools have a higher mean score on the measure than the graduates of medium or large enrollment schools. While the differences are not substantial between the year of graduation groups, they do suggest a definite trend: the larger the enrollment of the school, the less the amount of basic skill learning acknowledged by graduates, when the amount of acknowledged skill learning has been weighted for importance to present job in the trade or highly related trades. A plausible interpretation is that more of basic trade skills are learned in small enrollment schools than medium and large enrollment schools. The differences, however, are not substantial, and do not warrant much of an issue.

WHERE MOST WAS LEARNED ABOUT SKILLS

Introduction

The analyses presented in the preceding two sections were essentially efforts to assess how much of the basic trade skills graduates learned in high school. The analyses presented in this section have the same objective. The difference is largely a matter of how the questions were put to the graduates. The earlier analyses were based upon the graduate's rating of how much of each basic skill was learned in high school. The analyses in this section are based upon asking the graduate where he learned most about each basic skill — in school, on-the-job, in an apprenticeship program, or in a school cooperative program? Since most schools surveyed did not have cooperative programs or formal relation with apprenticeship program, it can be expected that these two sources of trade learning will be acknowledged much less frequently. The issue is whether they learned most of a specific skill in school or on the job. The data should serve to confirm some of the earlier findings reported in this chapter.

Analysis by Year of Graduation

In terms of percentages, how do the graduates split in their acknowledgements of where they learned most about the basic skills? Are there significant differences between the year of graduation groups? Table 98 provides the data.

The percentages of graduates who reported that they learned the most in school cooperative programs and apprenticeship programs are relatively small for reasons explained earlier. The main comparison is between learning most in the high school trade course or on the job. Several general statements can be made on the basis of the data shown in Table 98.

1. The percentage of graduates who report that the job was the source of learning most about the skills increases with increased job experience. This is to be expected because of increased opportunity to learn more on the job. This is no reflection on the schools.

Table 98. WHERE MOST WAS LEARNED ABOUT SKILL: PERCENTAGES BY RESPONSE CATEGORY BY YEAR OF GRADUATION

(Based on graduates in the trade or in highly related trades)

Knowledge or Skill Rated By Graduates In Same or Highly Related Trade	Year of Graduation	WHERE MOST WAS LEARNED ABOUT SKILL									
		H. S. Co-op Program		H. S. Shop or Class		Apprentice Program		On Regular Job		Elsewhere	
		N	%	N	%	N	%	N	%	N	%
Manual job skills	1953	12	3.8	114	36.1	49	15.5	130	41.1	11	3.5
	1958	14	2.9	198	41.5	70	14.6	181	37.9	15	3.1
	1962	33	5.0	345	52.5	56	8.5	201	30.6	22	3.3
	Combined	59	4.1	659	54.3	175	12.0	514	35.3	48	3.3
Practical job knowledge	1953	8	2.5	71	22.0	41	12.7	189	58.7	13	4.0
	1958	22	4.5	121	25.0	60	12.4	262	54.1	19	3.9
	1962	33	5.2	253	40.1	47	7.4	286	45.3	12	1.9
	Combined	63	4.4	449	31.1	149	10.3	737	51.1	44	3.1
Theoretical job knowledge	1953	13	4.1	132	41.8	33	10.4	118	37.3	20	6.3
	1958	18	3.9	222	48.0	56	12.1	142	30.7	24	5.2
	1962	23	3.7	375	59.9	41	6.5	170	27.2	17	2.7
	Combined	54	3.8	732	52.0	130	9.2	431	30.6	61	4.3
Mathematical skills	1953	18	5.6	193	60.3	30	9.4	45	14.1	34	10.6
	1958	39	8.2	312	65.3	34	7.1	50	10.5	43	9.0
	1962	37	5.9	483	77.0	18	2.9	63	9.9	27	4.3
	Combined	94	6.6	992	69.4	83	5.8	157	11.0	104	7.3
Communication skills	1953	12	3.8	155	48.4	23	7.2	92	28.8	38	11.9
	1958	21	4.5	244	52.6	27	5.8	117	25.2	55	11.8
	1962	32	5.2	408	65.7	37	6.0	114	18.4	30	4.8
	Combined	65	4.6	811	57.5	87	6.2	324	23.0	123	8.7
Reading and interpretive skills	1953	14	4.6	138	45.1	29	9.5	104	34.0	21	6.9
	1958	25	5.3	219	46.8	45	9.6	145	31.0	34	3.3
	1962	27	4.4	388	62.9	37	6.0	143	23.2	22	3.6
	Combined	66	4.7	748	53.6	111	8.0	393	28.2	77	5.5
Clerical skills	1953	7	2.2	86	27.2	11	3.5	160	50.6	52	16.5
	1958	17	3.6	138	29.4	28	6.0	227	48.3	60	12.8
	1962	44	7.4	290	48.5	19	3.2	188	31.4	57	9.5
	Combined	68	4.9	517	37.3	58	4.2	575	41.5	169	12.2
Personal relations skills	1953	14	4.5	42	13.6	6	1.9	200	64.7	47	15.2
	1958	22	4.7	75	16.0	26	5.6	268	57.4	76	16.3
	1962	23	3.8	183	30.2	24	4.0	303	50.1	72	11.9
	Combined	60	4.3	302	21.8	57	4.1	771	55.7	195	14.1
Supervisory skills	1953	4	1.3	33	10.6	9	2.9	218	69.9	48	15.4
	1958	9	1.9	65	13.9	24	5.2	287	61.6	81	17.4
	1962	22	3.8	206	35.5	25	4.3	261	45.0	66	11.4
	Combined	36	2.6	306	22.5	58	4.3	768	56.3	195	14.3

2. Some skills are mostly acquired in school. They include manual job skills, theoretical job knowledge, mathematical skills, communication skills, and reading and interpretive skills.

3. Other skills are mostly acquired on the job. They include practical job knowledge, clerical skills, personal relations skills, and supervisory skills.

4. Mathematical skills, if not acquired in school, are not likely to be developed to any substantial degree on the job.

Analysis by Type of School

How do the graduates of comprehensive and vocational schools compare in terms of where they claim to have learned most about each basic skill? Table 99 presents the data.

The percentages show a consistent difference in all but two skill areas that favors the vocational schools. A greater percentage of vocational school graduates claimed they learned most about the following skills in school than did comprehensive graduates:

1.	Manual job skills	(49.2 vs. 37.5 percent)
2.	Practical job knowledge	(32.2 vs. 29.0 percent)
3.	Theoretical job knowledge	(55.0 vs. 46.4 percent)
4.	Mathematical skills	(73.7 vs. 60.9 percent)
5.	Communication skills	(59.7 vs. 53.0 percent)
6.	Interpretive skills	(56.7 vs. 47.7 percent)
7.	Clerical skills	(38.8 vs. 33.9 percent)

The two skill areas that favored the comprehensive schools were:

8.	Personal relations skills	(24.0 vs. 20.6 percent)
9.	Supervisory skills	(23.0 vs. 22.1 percent)

Table 99. WHERE MOST WAS LEARNED ABOUT SKILL: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS IN TERMS OF PERCENTAGES BY RESPONSE CATEGORY

(Based on graduates in the trade or in highly related trades)

Knowledge or Skill Rated By Graduates In Same or Highly Related Trade	Type of School	WHERE MOST WAS LEARNED ABOUT SKILL									
		H. S. Co-op Program		H. S. Shop or Class		Apprentice Program		On Regular Job		Elsewhere	
		N	%	N	%	N	%	N	%	N	%
Manual job skills	Vocational	36	3.7	475	49.2	89	9.2	338	35.0	27	2.8
	Comprehensive	23	4.7	183	37.5	86	17.6	175	35.9	21	4.3
Practical job knowledge	Vocational	35	3.7	305	32.2	86	9.1	492	52.0	29	3.1
	Comprehensive	28	5.7	143	29.0	63	12.8	244	49.5	15	3.0
Theoretical job knowledge	Vocational	29	3.1	509	55.0	74	8.0	273	29.5	40	4.3
	Comprehensive	25	5.2	223	46.4	56	11.6	156	32.4	21	4.4
Mathematical skills	Vocational	47	5.0	692	73.7	46	4.9	90	9.6	64	6.8
	Comprehensive	47	9.6	298	60.9	37	7.6	67	13.7	40	8.2
Communication skills	Vocational	39	4.2	556	59.7	43	4.6	206	22.1	87	9.3
	Comprehensive	26	5.5	253	53.0	44	9.2	118	24.7	36	7.5
Reading and interpretive skills	Vocational	36	3.9	518	56.7	62	6.8	247	27.1	50	5.5
	Comprehensive	30	6.2	229	47.7	49	10.2	145	30.2	27	5.6
Clerical skills	Vocational	39	4.2	357	38.8	29	3.2	384	41.8	110	12.0
	Comprehensive	29	6.2	158	33.9	29	6.2	191	41.0	59	12.7
Personal relations skills	Vocational	34	3.8	186	20.6	26	2.9	536	59.2	123	13.6
	Comprehensive	26	5.4	115	24.0	31	6.5	235	49.1	72	15.0
Supervisory skills	Vocational	20	2.2	197	22.1	29	3.2	523	58.6	123	13.8
	Comprehensive	16	3.4	108	23.0	29	6.2	245	52.1	72	15.3

The differences are small, compared with the differences that favored the vocational schools. Two interpretations can be made of these differences: (1) There is more learning of the basic skills in vocational than comprehensive high schools. (2) The differences reflect a difference in attitude toward former schools rather than differences in school learning of basic skills. Chapter 8 presents data to show that vocational school graduates do not have substantially more favorable attitudes toward their former schools than do comprehensive school graduates. Also, the nature of the differences for individual skills suggest considerable discrimination and response to the specific skill rather than a generalized response as would be the case if the differences were essentially a matter of attitude. The conclusion, therefore, is that vocational school graduates learn more of the basic skills in school than do comprehensive school graduates. The all-important question of why this might be so is not answered. A future report will be concerned with the problem.

Analysis by School Enrollment

How do graduates of small, medium and large schools compare in terms of where they claim to have learned most about each basic skill? Table 100 presents the data.

Of those who claimed to have learned most in school, the percentages favor the small enrollment school. From small ($<$ 500) to large ($>$ 1,500) enrollment schools, the percentage of graduates claiming they learned most in school decreases for the following skills:

1. Manual job skills . . . . (49.8 to 38 percent)
2. Practical job knowledge . . . . (34.4 to 28 percent)
3. Theoretical job knowledge . . . . (55.2 to 47 percent)
4. Mathematical skills . . . . (74.0 to 66.4 percent)
5. Communication skills . . . . (59.2 to 54.2 percent)
6. Interpretive skills . . . . (58.4 to 52.6 percent)
7. Clerical skills . . . . (40.3 to 36.1 percent)

Table 100. WHERE MOST WAS LEARNED ABOUT SKILL: COMPARISON OF TOTAL SCHOOL ENROLLMENT CATEGORIES IN TERMS OF PERCENTAGES BY RESPONSE CATEGORY

(Based on graduates in the trade or in highly related trades)

Knowledge or Skill Rated By Graduates In Same or Highly Related Trade	School Enrollment	WHERE MOST WAS LEARNED ABOUT SKILL									
		H. S. CO-op Program		H. S. Shop or Class		Apprentice Program		On Regular Job		Elsewhere	
		N	%	N	%	N	%	N	%	N	%
Manual job skills	< 500	22	3.9	278	49.8	49	8.8	192	34.4	17	3.0
	500-1500	22	4.4	231	45.7	58	11.5	179	35.4	15	3.0
	> 1500	15	3.8	148	38.0	68	17.5	143	36.8	15	3.8
Practical job knowledge	< 500	23	4.2	187	34.4	40	7.4	275	50.6	19	3.5
	500-1500	23	4.7	147	29.8	59	12.0	250	50.7	14	2.8
	> 1500	17	4.2	112	27.9	50	12.4	212	52.7	11	2.7
Theoretical job knowledge	< 500	13	2.4	295	55.2	45	8.4	159	29.8	22	4.1
	500-1500	25	5.2	253	52.3	39	8.1	142	29.3	25	5.2
	> 1500	16	4.1	182	47.0	46	11.9	129	33.3	14	3.6
Mathematical skills	< 500	17	3.1	401	74.0	29	5.4	58	10.7	37	6.8
	500-1500	44	9.0	325	66.5	24	4.9	58	11.9	38	7.8
	> 1500	33	8.3	263	66.4	30	7.6	41	10.4	29	7.3
Communication skills	< 500	20	3.7	316	59.2	29	5.4	117	21.9	52	9.7
	500-1500	26	5.3	284	58.1	28	5.7	117	23.9	34	7.0
	> 1500	19	4.9	208	54.2	30	7.8	90	23.4	34	9.6
Reading and interpretive skills	< 500	18	3.4	310	58.4	38	7.1	129	24.3	36	6.8
	500-1500	27	5.7	232	48.8	40	8.4	152	32.0	24	5.1
	> 1500	21	5.4	203	52.6	33	8.5	112	29.0	17	4.4
Clerical skills	< 500	20	3.7	216	40.3	26	4.8	214	39.9	60	11.2
	500-1500	30	6.4	163	34.6	12	2.5	200	42.5	66	14.0
	> 1500	18	4.8	136	36.1	20	5.3	160	42.4	43	11.4
Personal relations skills	< 500	15	2.9	109	20.8	16	3.1	313	59.7	71	13.5
	500-1500	29	6.1	109	22.8	23	4.8	257	53.6	61	12.7
	> 1500	16	4.2	82	21.6	18	4.7	201	52.9	63	16.6
Supervisory skills	< 500	13	2.5	123	23.8	22	4.2	288	55.7	71	13.7
	500-1500	15	3.2	100	21.5	19	4.1	265	57.0	66	14.2
	> 1500	8	2.1	81	21.4	17	4.5	215	56.7	58	15.3

The question is: Why? One interpretation is that more of these skills are indeed being learned in small enrollment schools than in medium or in large enrollment schools. Another interpretation is that graduates from small enrollment schools are more generously inclined to their former schools than those from medium or large schools. But, if that is so, one would expect them to have a more favorable overall attitude toward their former schools. Chapter 8 presents data that shows graduates from small enrollment schools are more, not less, critical of their former schools than those from medium and large enrollment schools. The first interpretation seems, therefore, to be more reasonable. The conclusion is consistent with the findings reported in the two preceding sections.

NEED FOR MORE TRAINING IN BASIC SKILLS

Introduction

Vocational education has never claimed to turn out graduates at or even near the peak of their learning about the trade. The assumption has been that vocational education would provide the trade fundamentals, that is, the foundation of trade knowledge and skills upon which graduates would build via additional apprenticeship and/or on-the-job training. It would be interesting to know what percentage of the graduates feel the need for additional training and experience in the trade. The fact that a substantial percentage of graduates presently in the trade or a highly related trade feel the need for additional training is not necessarily a reflection on how well they were trained in high school. It is probably a better interpretation to conclude that the expressed need for additional training is a reflection of experience in the trade since leaving high school. In that sense, a substantial percentage of graduates who feel the need for further training is a healthy sign of awareness of the need for self-development in their chosen occupation.

Analysis by Year of Graduation

What percentage of graduates presently in the trade or a highly related trade feel the need for additional training in the basic skill and knowledge areas? Do some particular skills or knowledges stand out? Does the experience of the graduate in terms of years in the trade have any influence on felt needs for additional training? Table 101 provides the data.

Based on the combined graduates, the rank order of the skills in terms of felt need for additional training is as follows:

	Percent
1. Supervisory skills	66.6
2. Mathematical skills	64.2

3. Reading and interpretive skills 63.9
4. Practical job knowledge 61.3
5. Communication skills. 61.0
6. Manual job skills 59.8
7. Theoretical job knowledge 58.6
8. Personal relations skills 58.2
9. Clerical skills 48.9

For all but one of the basic skill areas, the majority of graduates report the need (or is it desire?) for additional training. The need for training in supervisory skills tops the list. This undoubtedly reflects increasing responsibility with years of experience in the trade. The need for further training in mathematical and reading-interpretive skills is also high on the list. We know from the preceding sections that these two skills are mainly developed in school. At the bottom of the list, and far removed from those above, is clerical skills. Only 49 percent of the graduates who responded felt the need for additional training in clerical skills.

Table 101. NEED FOR ADDITIONAL SKILL TRAINING: PERCENTAGES REPORTING SUCH NEED BY YEAR OF GRADUATION

(Based on graduates in the trade or in highly related trades)

Skill and Knowledge Areas For Which Graduates Reported Need For Additional Training	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Manual job skills	205	58.7	282	55.5	429	63.4	920	59.8
Practical job knowledge	205	61.2	284	57.7	411	64.2	903	61.3
Theoretical job knowledge	202	60.7	261	55.5	370	59.7	836	58.6
Mathematical skills	222	65.5	313	64.7	405	63.5	941	64.2 A
Communication skills	227	67.6	285	60.2	368	58.1	881	61.0 A
Reading and interpretive skills . .	210	63.1	301	62.7	412	65.1	926	63.9
Clerical skills	176	53.2	244	50.7	277	45.0	699	48.9 A
Personal relations skills	210	64.4	279	58.7	341	54.3	834	58.2 A
Supervisory skills	236	72.6	298	64.8	389	64.1	936	66.6 A

The basic skills which are marked with an upward pointing arrow are those that show a consistent trend of a greater percentage reporting the need for more training with increased years out of school. For example, the percentage who report a need for more personal relations skill training increases 54.3 percent of 1962 graduates to 58.7 for 1958 graduates to 64.4 for 1953 graduates. On the other hand, the need for training in some skill areas declines with increased years out of school. A greater percentage of 1962 graduates than 1958 or 1953 graduates report the need for more training to develop manual skills and practical job knowledge. This is as one might expect.

The large percentages of graduates in all year of graduation groups that feel the need or desire for more training, particularly in such areas as supervisory skills, personal relations skills and communications skills which are not emphasized by high schools, indicates a large, potential receptive audience for the right kind of post-high school adult education. Where such education is geared to fulfilling specific skill needs, rather than trade training, the response should be there among past graduates and others in similar trades.

Analysis by Type of School

How do graduates from vocational and academic schools compare in terms of percentages that feel the need for additional training in trade skills? Since it is improbable that the on-the-job experiences of such graduates would be essentially different, any differences in felt need for additional training may reflect variation in school training. Table 102 provides the data.

There are no significant differences between vocational and comprehensive school graduates in terms of expressed need for additional training in manual job skills, practical job knowledge, theoretical job knowledge, communication skills, personal relations skills, and supervisory skills.

A slightly greater percentage of comprehensive school graduates claim the need for more training in mathematical, reading, and clerical skills. It suggests, albeit not convincingly, that these are areas of training weakness in some comprehensive schools. Additional evidence would be desirable before much were made of this.

Table 102. NEED FOR ADDITIONAL SKILL TRAINING: COMPARISON OF COMPREHENSIVE AND VOCATIONAL SCHOOLS IN TERMS OF PERCENTAGES REPORTING TRAINING NEEDS
(Based on graduates in the trade or in highly related trades)

Skill and Knowledge Areas For Which Graduates Reported Need For Additional Training	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Manual job skills	600	59.4	320	60.7
Practical job knowledge	592	61.2	311	61.7
Theoretical job knowledge	544	58.1	291	59.5
Mathematical skills	609	63.4	331	65.9
Communication skills	584	61.7	296	59.7
Reading and interpretive skills	598	62.6	328	66.5
Clerical skills	437	46.6	261	53.0
Personal relations skills	538	57.5	296	59.8
Supervisory skills	613	66.6	322	66.5

Analysis by School Enrollment

How do graduates from small, medium and large enrollment schools compare in terms of acknowledged need for additional training in the basic skill and knowledge areas? Table 103 provides the data.

With but one exception, the response shows a smaller percentage of medium enrollment school graduates reporting a need for more training than graduates of small and large enrollment schools. While the differences for any one skill are not substantial, the consistency of the pattern suggests that graduates from small and large enrollment schools, over all skills, feel a greater need for additional training than those from medium enrollment schools. A plausible interpretation is lacking.

Table 103. NEED FOR ADDITIONAL SKILL TRAINING: COMPARISON OF TOTAL SCHOOL ENROLLMENT CATEGORIES IN TERMS OF PERCENTAGES REPORTING TRAINING NEEDS (Based on graduates in the trade or in highly related trades)

Skill and Knowledge Areas For Which Graduates Reported Need For Additional Training	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Manual job skills	365	62.7	300	56.3	254	60.3
Practical job knowledge	346	62.4	302	58.5	254	63.5
Theoretical job knowledge	327	60.6	281	56.5	227	58.7
Mathematical skills	381	68.2	311	62.0	248	61.8
Communication skills	349	63.6	313	63.6	217	54.1
Reading and interpretive skills	366	66.1	315	63.4	244	61.6
Clerical skills	277	50.7	232	47.3	188	48.1
Personal relations skills	326	60.0	281	56.8	227	57.9
Supervisory skills	368	69.2	312	64.7	254	65.3

Analysis by Type of Trade

How do the graduates from the top ten vocational courses, in terms of graduate representation in the study, report their needs for additional training? The question was raised for exploratory purposes to establish the existence of differences by trade. Table 104 provides the number and percentages of graduates by trade who reported a need for additional training.

Definite trade differences exist in the need for additional training in the basic knowledge and skill areas. More than 75 percent of those in carpentry or a highly related trade, for example, reported a need for more training in practical job knowledge, mathematical skills, and reading and interpretive skills. Auto mechanics, in a service trade, report a greater need for personal relations skills than do the other trades. Almost 77 percent of the machinists report the need for additional training in mathematics. Eighty percent of those in welding trades report a need for more training in interpretive skills, such as blueprint reading. Electronic technicians are high in the need for theoretical trade knowledge and supervisory skills.

The highlights are listed primarily to illustrate the fact of trade differences. What these data verify is the need to follow up graduates in the trades to establish more precisely the training needs generated by experience in the trade. A systematic playback of such information would help the vocational educator in curriculum development and planning.

Table 104. NEED FOR ADDITIONAL SKILL TRAINING: COMPARISON OF TOP TEN TRADES IN TERMS OF PERCENTAGES REPORTING TRAINING NEEDS

(Based on graduates in the trade or in highly related trades)

The Ten Trades With Greatest Number of Graduates In Survey Sample		NUMBER AND PERCENT CLAIMING NEED FOR ADDITIONAL TRAINING								
		Manual Job Skills	Practical Job Knowledge	Mathematical Skills	Communication Skills	Reading and Interpretive Skills	Clerical Skills	Personal Relation Skills	Supervisory Skills	Theoretical Job Knowledge
Auto mechanics	%	65.2	61.3	54.7	55.9	55.3	59.0	67.7	63.9	53.6
	N	135	119	104	104	105	108	126	117	97
Carpentry	%	64.7	76.6	75.0	72.3	83.7	51.1	66.7	68.1	63.0
	N	33	36	36	34	41	23	32	32	29
Drafting	%	41.1	52.5	69.4	60.3	47.9	51.2	66.7	63.8	51.7
	N	51	64	86	73	58	63	80	74	60
Electrician	%	62.3	61.4	61.0	64.9	72.9	48.4	57.5	71.2	66.7
	N	99	94	94	100	113	75	88	109	102
Machinist	%	63.9	66.6	76.7	63.0	65.6	38.5	50.7	65.4	62.5
	N	209	211	243	196	204	119	155	193	193
Mill and cabinetry	%	52.9	67.1	68.1	63.9	75.4	62.9	65.2	71.0	55.1
	N	37	47	49	46	52	44	45	49	38
Printing	%	67.1	64.7	45.0	55.1	57.4	48.0	58.9	63.7	52.3
	N	96	88	59	70	74	61	73	79	67
Sheet metal	%	65.5	63.5	61.5	69.2	74.0	46.9	49.0	67.3	64.0
	N	36	33	32	36	37	23	25	35	32
Welding	%	49.1	50.0	25.0	63.3	80.0	50.0	48.0	62.0	54.2
	N	27	29	31	31	40	16	24	31	26
Electronic Technician	%	52.2	46.7	68.9	43.2	43.5	35.6	65.9	73.9	71.1
	N	24	21	31	19	20	16	29	34	32

8

GRADUATE'S RATINGS OF SCHOOL CHARACTERISTICS

☐ Graduate Attitudes Toward Former Schools 1

CHAPTER 8 SUMMARY

Attitudes Toward Former Schools

1. Attitude measure. Graduates were asked to rate ten school factors either poor, satisfactory, good, or excellent as applied to their former high school. The mean of the ten ratings constitutes an attitude-toward-former-school index.

2. Use of measure. The obtained attitude index was used primarily to determine the relationship between attitude toward the former high schools and performance on occupational and non-occupational measures.

3. Year of graduation. As defined, the favorability of attitude toward former schools declines slightly with increased years out of school. However, even after 11 years out of school, graduates have a highly favorable general opinion of their former schools.

4. Individual factor ratings. The three factors rated most highly by former graduates were (1) quality of shop instruction, (2) community reputation of school, and (3) condition of shop facilities. The three factors rated least favorably were (1) school placement services, (2) quality of vocational counseling, and (3) teacher interest in student problems. No factor received a mean rating of less than "satisfactory."

5. Type of school. There is no significant difference between graduates of vocational and comprehensive schools in favorableness of attitude toward former schools. There are some differences in terms of individual rated factors; e.g., vocational school graduates rated school placement services higher than comprehensive school graduates.

6. School enrollment. Graduates of small, medium, and large enrollment schools have about the same over-all attitude (highly favorable) toward their former schools. Graduates from small enrollment schools rated their schools lower on condition of shop facilities, condition of school, extra-curricular activities, and community reputation; but higher on placement services than medium and large enrollment school graduates.

7. Race of graduates. There is no significant difference between Negro and white graduates in over-all attitude toward former schools. Negro graduates rated placement services lower than did white graduates.

8. Academic versus vocational graduates. There is no significant difference between academic and vocational graduates in over-all attitude toward former high schools.

9. Individual school differences. The mean attitude scores of schools, based upon ratings of graduates, fall within a fairly narrow range. Even so, some schools received consistently higher mean attitude scores from their graduating classes than did others.

GRADUATE ATTITUDES TOWARD FORMER SCHOOLS

Introduction

The graduates were asked to rate ten factors about their former high school in categories of poor, satisfactory, good, and excellent. The ten factors rated by vocational graduates were:

1. Quality of intruction from shop instructors
2. Quality of instruction from academic teachers
3. Condition of shop facilities and equipment
4. General physical condition of school
5. Vocational counseling given students
6. Help given to students in finding jobs
7. Opportunity for extracurricular activities
8. Interest shown by teachers in student problems
9. Reputation of the school in the community
10. Strictness of school in maintaining discipline

The ratings were obtained primarily to provide the basis for an over attitude-toward-former-school score for each graduate. The score was the mean of the individual ratings. It was assumed that a diverse array of school factors would provide the graduates an opportunity to express indirectly a generalized attitude toward their former high schools. In Chapter 3, it was shown that the measure had a significant, albeit low, correlation with only one of the occupational measures, job satisfaction, indicating that graduates with a higher degree of job satisfaction tended to have a more favorable opinion of their former school. No cause-effect relationship is applied. It was also shown that the measure correlated with range of active leisure activities and degree of community organization affiliation. Apparently, the measure reflects personal characteristics more than it does school characteristics, although significant differences in mean attitude scores do exist between schools.

The present chapter is concerned with whether the measure is related to such basic variables as year of graduation, type of school attended, enrollment of school attended, and race of the graduates. While the ten factors rated were primarily a means to an end, i.e., the basis of a general attitude measure, they are individually of interest in terms of how graduates rated each. Comment upon the individual factor ratings is made where appropriate.

Analysis by Year of Graduation

What are the overall attitudes toward their former schools, as defined by this study, of the graduates of 1953, 1958, and 1962? Table 105 presents the data.

Table 105. ATTITUDE TOWARD FORMER HIGH SCHOOL: FREQUENCY DISTRIBUTION FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Attitude Toward School	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
4	18	1.7	100.0	27	1.8	100.0	37	2.0	100.0	82	1.9	100.0
3.7-3.9	61	5.6	98.3	80	5.5	98.2	153	8.5	98.0	294	6.7	98.1
3.4-3.6	138	12.8	92.7	188	12.8	92.7	295	16.3	89.5	623	14.3	91.4
3.1-3.3	182	16.9	79.9	289	19.7	79.9	399	22.1	73.2	873	20.0	77.1
2.8-3.0	221	20.5	63.0	312	21.2	60.2	364	20.1	51.1	900	20.6	57.1
2.5-2.7	180	16.7	42.5	249	16.9	39.0	263	14.6	31.0	693	15.9	36.5
2.2-2.4	135	12.5	25.8	188	12.8	22.1	171	9.4	16.4	494	11.3	20.6
1.9-2.1	88	8.2	13.3	87	6.0	9.3	88	4.9	7.0	265	6.1	9.3
1.6-1.8	38	3.5	5.1	37	2.5	3.3	31	1.7	2.1	107	2.4	3.2
1.3-1.5	15	1.4	1.6	10	0.7	0.8	5	0.3	0.4	31	0.7	0.8
1.0-1.2	2	0.2	0.2	2	0.1	0.1	2	0.1	0.1	6	0.1	0.1
Number	1078			1469			1808			4368		
Mean	2.8			2.9			3.0			2.9		
Median	2.9			2.9			3.0			3.0		
S.D.	0.58			0.54			0.53			0.55		

In general, vocational course graduates seem to have a high regard for their former schools. The mean values are 2.8, 2.9, and 3.0 for the graduates of 1953, 1958, and 1962 respectively. Thus, the more recent graduates have a slightly more favorable attitude toward their former schools. Two interpretations are possible: (1) the more recent graduates rated their schools more generously because of an unknown factor, possibly school loyalty, which diminishes with years out of school, or (2) the schools have undergone changes which are reflected in more favorable ratings from the more recent graduates. The first interpretation is more prudent.

The differences between the year of graduation groups are slight in any case, and do not warrant special efforts to control for such differences in other analyses influenced by attitude toward former schools. Nevertheless, it should be kept in mind that recent graduates appear to be a little more generous in their ratings of school characteristics.

The mean ratings for each of the ten rated factors are given in Table 106 for the graduating classes separately and combined.

Table 106. ATTITUDE INDEXES AND MEAN RATINGS OF THE RELATED HIGH SCHOOL FACTORS BY YEAR OF GRADUATION

Factors of Former High Schools Rated By Graduates *	YEAR OF GRADUATION												
	1953			1958			1962			Combined			
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.	
Quality of shop instruction	1141	3.2	.82	1628	3.[illegible]	.80	2445	3.4	.76	5233	3.3	.79	▲
Quality of academic instruction	1120	2.9	.78	1594	2.9	.76	2379	3.0	.74	5111	3.0	.76	
Condition of shop facilities	1139	2.9	.92	1619	3.0	.90	2439	3.0	.89	5215	3.0	.91	
Condition of school	1138	2.8	.87	1612	2.9	.89	2440	3.0	.88	5208	2.9	.89	▲
Vocational counseling	1124	2.5	1.06	1607	2.6	1.01	2411	2.8	.98	5161	2.6	1.02	▲
Placement services	1059	2.5	1.12	1540	2.4	1.09	2332	2.7	1.07	4948	2.6	1.10	
Extracurricular activities	1114	2.7	.93	1576	2.8	.90	2390	2.9	.89	5098	2.8	.91	▲
Teacher's interest in students	1097	2.7	.90	1572	2.8	.90	2362	2.9	.90	5050	2.8	.91	▲
Reputation in community	1100	3.1	.87	1581	3.1	.89	2381	3.2	.85	5080	3.1	.87	
Strictness of discipline	1105	2.9	.86	1589	3.0	.85	2390	3.0	.83	5103	3.0	.85	
HIGH SCHOOL ATTITUDE INDEX	1078	2.8	.55	1469	2.9	.54	1808	3.0	.53	4368	3.0	.55	

* 4 = Excellent; 3 = Good; 2 = Satisfactory; and 1 = Poor

Based upon the mean ratings obtained from the combined graduates, the ten factors ranked as follows:

1.	Quality of shop instruction	3.3
2.	Reputation of school	3.1
3.	Quality of academic instruction	3.0
4.	Condition of shop facilities	3.0
5.	Strictness of school discipline	3.0
6.	General condition of school	2.9
7.	Opportunity for extracurricular activities	2.8
8.	Teacher interest in student problems	2.8
9.	Quality of vocational counseling	2.6
10.	Help given graduates to find jobs	2.6

None of the factors received a mean rating of less than "satisfactory." Quality of instruction, condition of facilities, strictness of school discipline, and reputation of school had mean ratings between "good" and "excellent." The quality of vocational counseling and help given graduates to find jobs received the least favorable ratings. It is interesting to note that the 1958 recession year graduates gave placement services a lower rating than both 1953 and 1962 graduates. The correspondence between mean ratings of placement services and placement performance suggests that differences between mean ratings do reflect differences in factors rated. One can conclude that the relatively low ratings given to vocational counseling, placement services, teacher interest in student problems, and opportunity for extracurricular activities do reflect a greater degree of dissatisfaction with these factors, and a greater need for improvement.

The upward-pointing arrows in Table 106 indicate a consistently higher mean rating with recency of graduation. Without exception, the mean ratings yielded by 1962 graduates are greater than those from 1953 graduates.

Without exception, each of the ten factors was rated higher by 1962 graduates than by 1953 graduates. The upward-pointing arrows in Table 106 indicate five factors with consistently higher mean ratings from more recent graduates. Unfortunately, as was pointed out earlier, the data cannot be interpreted unequivocally as reflecting changes in schools rather than changes in graduates.

Otherwise, one would be tempted to conclude that higher mean ratings from more recent graduates reflect improvements in the factors noted. Improvements have undoubtedly been made, but the methodology of obtaining the data does not permit such a conclusion.

Table 107. RESPONSE PERCENTAGES, BY YEAR OF GRADUATION, TO THE TEN SCHOOL FACTORS RATED BY VOCATIONAL GRADUATES

Factors of Former High Schools Rated By Graduates	Year of Graduation	RATING GIVEN TO ITEM							
		Poor		Satisfactory		Good		Excellent	
		N	%	N	%	N	%	N	%
Quality of instruction from shop instructors.	1953	42	3.7	160	14.0	451	39.5	488	42.8
	1958	52	3.2	210	12.9	611	37.5	755	46.4
	1962	65	2.7	231	9.4	843	34.5	1306	53.4
Quality of instruction from academic teachers.	1953	53	4.7	225	20.1	589	52.6	253	22.6
	1958	66	4.1	326	20.5	859	53.9	343	21.5
	1962	67	2.8	431	18.1	1292	54.3	589	24.8
Condition of shop facilities and equipment.	1953	94	8.3	256	22.5	453	39.8	336	29.5
	1958	119	7.4	319	19.7	649	40.1	532	32.9
	1962	160	6.6	411	16.9	959	39.3	909	37.3
General physical condition of school.	1953	108	9.5	279	24.5	529	46.5	222	19.5
	1958	130	8.1	308	19.1	713	44.2	461	28.6
	1962	168	6.9	405	16.6	1054	43.2	813	33.3
Vocational counseling given to students.	1953	267	23.8	292	26.0	344	30.6	221	19.7
	1958	289	18.0	421	26.2	567	35.3	330	20.5
	1962	317	13.1	556	23.1	898	37.2	640	26.5
Help given students to find jobs.	1953	277	26.2	259	24.5	265	25.9	258	24.4
	1958	404	26.2	392	25.5	419	27.2	325	21.1
	1962	438	18.8	547	23.5	698	29.9	649	27.8
Opportunity for extracurricular activities.	1953	131	11.8	304	27.3	446	40.0	233	20.9
	1958	156	9.9	389	24.7	687	43.6	344	21.8
	1962	172	7.2	509	21.3	1010	42.3	699	29.2
Teacher's interest in student problems.	1953	108	9.8	339	30.9	424	38.7	226	20.6
	1958	142	9.0	451	28.7	623	39.6	356	22.6
	1962	177	7.5	524	22.2	955	40.4	706	29.9
School's reputation in the community.	1953	67	6.1	168	15.3	449	40.8	416	37.8
	1958	102	6.5	241	15.2	601	38.0	637	40.3
	1962	115	4.8	350	14.7	941	39.5	975	40.9
School's strictness in maintaining discipline.	1953	82	7.4	234	21.2	515	46.6	274	24.8
	1958	97	6.1	315	19.8	719	45.2	458	28.8
	1962	114	4.8	423	17.7	1095	45.8	758	31.7

Table 107 provides the percentages by response category for each of the factors rated. In all but three factors, i.e. instruction by academic teachers, help given to students to find jobs, and reputation of the school in the community, the percentages of "excellent" responses increase with recency of graduation and the percentages of "poor" responses decreases. The sharp differences at the extremes are obliterated by the failure of the two middle categories, satisfactory and good, to differentiate by year of graduation. The trends in the extreme categories, however, confirm the interpretation that recency of graduation is a variable influencing ratings of school factors, and therefore the general attitude toward the school.

Analysis by Type of School

Do the graduates of vocational and comprehensive schools differ in terms of the attitude-toward-school measure? Do they differ in terms of the mean ratings given the individual items that comprise the attitude measure? Table 108 presents the data.

The high school attitude indexes are not significantly different for any of the graduating classes. This suggests that graduates of vocational and comprehensive schools are not different in terms of overall attitude toward former schools.

The graduates of the two types of schools differ in only two of the factors that comprise the attitude measure: placement services and reputation of the school in the community. Vocational school graduates rate the placement services of their schools higher than do comprehensive school graduates. This is consistent with the better placement performance of vocational schools discussed in Chapter 5. However, they rate the community reputation of their schools less than do the comprehensive school graduates. They are probably reflecting differences in community attitudes toward the two types of schools.

Table 109 provides the percentages by response category for the graduates of both types of schools. The factors which show the greatest differences in the extreme ratings are: (1) help given to students to find jobs, (2) opportunity for extracurricular activities, and (3) reputation of school in community.

Table 108. ATTITUDE INDEXES AND MEAN RATINGS OF THE RELATED HIGH SCHOOL FACTORS BY TYPE OF SCHOOL

Factors of Former High Schools Rated By Graduates *		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
Quality of shop instruction		3073	3.3	.78	2160	3.3	.81
Quality of academic instruction		3011	3.0	.78	2100	3.0	.73
Condition of shop facilities		3067	3.0	.92	2148	3.0	.89
Condition of school		3058	2.9	.93	2150	3.0	.82
Vocational counseling		3036	2.6	1.01	2125	2.7	1.02
Placement services		2914	2.7	1.09	2034	2.4	1.08
Extracurricular activities		2993	2.8	.92	2105	2.9	.87
Teacher's interest in students		2969	2.9	.91	2081	2.8	.91
Reputation in the community		2980	3.0	.91	2100	3.3	.79
Strictness of discipline		2997	3.0	.87	2106	3.0	.82
HIGH SCHOOL ATTITUDE INDEX							
Year of Graduation	1953	663	2.82	.58	415	2.85	.57
	1958	843	2.84	.55	626	2.94	.52
	1962	1078	2.99	.54	730	2.96	.52
	Combined	2595	3.00	.56	1773	2.95	.55

* 4 = Excellent; 3 = Good; 2 = Satisfactory; and 1= Poor

Analysis by School Enrollment

Do the graduates of small, medium and large enrollment schools differ in terms of the attitude-toward-school measure? Do they differ in terms of the mean ratings given the individual items that comprise the attitude measure? Table 110 provides the data.

The high school attitude indexes for the three enrollment categories are not significantly different for any of the graduating classes, although the

Table 109. RESPONSE PERCENTAGES, BY TYPE OF SCHOOL, TO THE TEN SCHOOL FACTORS RATED BY VOCATIONAL GRADUATES

Factors of Former High Schools Rated By Graduates	Type of School	RATING GIVEN TO ITEM							
		Poor		Satisfactory		Good		Excellent	
		N	%	N	%	N	%	N	%
Quality of instruction from shop instructors.	Vocational	88	2.9	344	11.2	1142	37.2	1499	48.8
	Comprehensive	72	3.3	260	12.0	768	35.6	1060	49.1
Quality of instruction from academic teachers.	Vocational	120	4.0	608	20.2	1559	51.8	724	24.0
	Comprehensive	68	3.2	377	18.0	1190	56.7	465	22.1
Condition of shop facilities and equipment.	Vocational	239	7.8	593	19.3	1193	38.9	1042	34.0
	Comprehensive	140	6.5	394	18.3	872	40.6	742	34.5
General physical condition of school.	Vocational	302	9.9	632	20.7	1291	42.2	833	27.2
	Comprehensive	107	5.0	363	16.9	1011	47.0	669	31.1
Vocational counseling given to students.	Vocational	512	16.9	769	25.3	1065	35.1	690	22.7
	Comprehensive	364	17.1	501	23.6	755	35.5	505	23.8
Help given students to find jobs.	Vocational	573	19.7	664	22.8	834	28.6	843	28.9
	Comprehensive	551	27.1	537	26.4	551	27.1	395	19.4
Opportunity for extra-curricular activities.	Vocational	329	11.0	744	24.9	1255	41.9	665	22.2
	Comprehensive	133	6.3	463	22.0	897	42.6	612	29.1
Teacher's interest in student problems.	Vocational	236	7.9	757	25.5	1174	39.5	802	27.0
	Comprehensive	194	9.3	560	26.9	833	40.0	494	23.7
School's reputation in the community.	Vocational	220	7.4	511	17.1	1173	39.4	1076	36.1
	Comprehensive	66	3.1	252	12.0	823	39.2	959	45.7
School's strictness in maintaining discipline.	Vocational	194	6.5	579	19.3	1324	44.2	900	30.0
	Comprehensive	102	4.8	399	18.9	1010	48.0	595	28.3

measure is consistently lower for the small enrollment schools, suggesting a somewhat less favorable attitude by graduates from small enrollment schools. Nevertheless, the data suggest that size of school enrollment is not a variable influencing the general attitude graduates have toward their former schools.

Table 110. ATTITUDE INDEXES AND MEAN RATINGS OF THE RELATED HIGH SCHOOL FACTORS BY SIZE OF SCHOOL

Factors of Former High Schools Rated By Graduates *	SIZE OF SCHOOL ENROLLMENT								
	< 500			500-1500			> 1500		
	N	M	S.D.	N	M	S.D.	N	M	S.D.
Quality of shop instruction	1732	3.3	.81	1982	3.3	.79	1519	3.3	.78
Quality of academic instruction	1680	3.0	.76	1935	3.0	.75	1496	2.9	.75
Condition of shop facilities	1720	2.8	.93	1973	3.0	.88	1522	3.1	.89
Condition of school	1716	2.8	.90	1970	2.9	.91	1522	3.1	.80
Vocational counseling	1705	2.6	1.02	1950	2.7	1.02	1506	2.6	1.01
Placement services	1681	2.6	1.10	1796	2.6	1.10	1471	2.5	1.08
Extracurricular activities	1696	2.6	.93	1896	2.9	.88	1506	2.9	.87
Teacher's interest in students	1710	2.9	.92	1833	2.8	.90	1507	2.8	.90
Reputation in community	1716	3.0	.90	1841	3.2	.85	1523	3.2	.83
Strictness of discipline	1734	3.0	.88	1845	3.0	.83	1524	2.9	.83
HIGH SCHOOL ATTITUDE INDEX									
Year of Graduation 1953	390	2.76	.58	404	2.90	.58	284	2.82	.56
1958	483	2.81	.59	580	2.92	.59	406	2.92	.58
1962	610	2.92	.54	653	3.04	.53	545	3.02	.52
Combined	1485	2.85	.57	1646	2.96	.54	1237	2.94	.53

* 4 = Excellent; 3 = Good; 2 = Satisfactory; and 1 = Poor

Some of the individual rated school factors do reflect enrollment differences. The mean ratings of shop facilities, general school condition, and opportunity for extracurricular activities increases with increased school enrollment,

Table III. RESPONSE PERCENTAGES, BY SCHOOL ENROLLMENT CATEGORIES, TO THE TEN SCHOOL FACTORS RATED BY VOCATIONAL GRADUATES

Factors of Former High Schools Rated By Graduates	School Enrollment	RATING GIVEN TO ITEM							
		Poor		Satisfactory		Good		Excellent	
		N	%	N	%	N	%	N	%
Quality of instruction from shop instructors.	< 500	57	3.3	220	12.7	645	37.2	810	46.8
	500-1500	62	3.1	207	10.4	709	35.8	1004	50.7
	>1500	41	2.7	177	11.7	556	36.6	745	49.0
Quality of instruction from academic teachers.	< 500	62	3.7	343	20.4	887	52.8	338	23.1
	500-1500	67	3.5	345	17.8	1045	54.0	478	24.7
	>1500	59	3.9	297	19.9	817	54.6	323	21.6
Condition of shop facilities and equipment.	< 500	161	9.4	410	23.8	686	39.9	463	26.9
	500-1500	119	6.0	355	18.0	800	40.5	699	35.4
	> 1500	99	6.5	222	14.6	579	38.0	622	40.9
General physical condition of school.	< 500	175	10.2	407	23.7	775	45.2	359	20.9
	500-1500	171	8.7	378	19.2	830	42.1	591	30.0
	>1500	63	4.1	210	13.8	697	45.8	552	36.3
Vocational counseling given to students.	< 500	297	17.4	430	25.2	596	35.0	382	22.4
	500-1500	330	16.9	459	23.5	688	35.3	473	24.3
	> 1500	249	16.5	381	25.3	536	35.6	340	22.6
Help given students to find jobs.	< 500	368	21.9	394	23.4	478	28.4	441	26.2
	500-1500	400	22.3	424	23.6	497	27.7	475	26.4
	> 1500	356	24.2	383	26.0	410	27.9	322	21.9
Opportunity for extracurricular activities.	< 500	229	13.5	475	28.0	687	40.5	305	18.0
	500-1500	138	7.3	408	21.5	814	42.9	536	28.3
	>1500	95	6.3	324	21.5	651	43.2	436	29.0
Teacher's interest in student problems.	< 500	139	8.1	419	24.5	655	38.3	497	29.1
	500-1500	146	8.0	487	26.6	729	39.8	471	25.7
	>1500	145	9.6	411	27.3	623	41.3	328	21.8
School's reputation in the community.	< 500	130	7.6	316	18.4	702	40.9	568	33.1
	500-1500	86	4.7	249	13.5	682	37.0	824	44.8
	>1500	70	4.6	198	13.0	612	40.2	643	42.2
School's strictness in maintaining discipline.	< 500	113	6.5	340	19.6	744	42.9	537	31.0
	500-1500	98	5.3	315	17.1	861	46.7	571	30.9
	>1500	85	5.6	323	21.2	729	47.8	387	25.4

as did reputation of school in community.

Table 111 provides the percentages for each response category for each of the factors rated. When the percentages in the two extreme categories are considered, the factors rated higher with larger enrollment are: (1) condition of shop facilities and equipment, (2) physical conditon of school, and (3) opportunity for extracurricular activity. The factors that are rated higher with smaller enrollment are: (1) help given to students to find job, and (2) interest shown by teachers in students.

Analysis by Race of Graduate

Do Negro and white graduates differ in terms of the attitude-toward-school measure? Do they differ in terms of the mean ratings given the individual items that comprise the attitude measure? Table 112 provides the data.

Table 112. ATTITUDE INDEXES AND MEAN RATINGS OF THE RELATED HIGH SCHOOL FACTORS BY RACE OF GRADUATE

Factors of Former High Schools Rated By Graduates *		RACE OF GRADUATE								
		White			Negro			Other		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Quality of shop instruction		4777	3.3	.79	339	3.3	.82	19	3.1	.79
Quality of academic instruction		4685	3.0	.76	317	3.0	.73	19	2.9	.91
Condition of shop facilities		4769	3.0	.91	330	2.9	.88	19	3.2	.87
Condition of school		4760	2.9	.89	333	3.2	.84	19	3.1	.72
Vocational counseling		4721	2.6	1.02	329	2.8	.96	19	2.6	1.04
Placement services		4512	2.6	1.10	326	2.4	1.04	17	2.2	.98
Extracurricular activities		4657	2.8	.91	327	2.8	.94	17	2.8	.75
Teacher's interest in students		4608	2.8	.91	327	2.9	.91	19	2.8	.83
Reputation in the community		4634	3.1	.87	332	3.3	.86	19	2.9	1.07
Strictness of discipline		4654	3.0	.85	333	3.2	.80	19	2.8	.93
HIGH SCHOOL ATTITUDE INDEX										
Year of Graduation	1953	1030	2.83	.58	38	2.82	.65	3	3.00	.43
	1958	1348	2.87	.54	91	3.11	.47	4	2.42	.61
	1962	1635	3.00	.53	127	2.98	.54	4	3.18	.26
	Combined	4025	2.91	.55	257	3.00	.54	11	2.86	.56

* 4 = Excellent; 3 = Good; 2 = Satisfactory; and 1 = Poor

The differences between the high school attitude indexes for white and Negro graduates are not significant for any of the graduating classes. The conclusion is that white and Negro graduates do not differ significantly in overall attitude toward former high schools.

Negro graduates rated the following factors slightly higher than white graduates: general condition of school, vocational counseling, reputation of school in community, and strictness of discipline. They rated placement services lower than did the white graduates. The latter is understandable, in view of the greater difficulty in placing Negroes in the trades.

The comparison of white and Negro ratings does not take into account the possibility that ratings from Negroes who attended segregated schools may be different from those who attended non-segregated schools. It is therefore impossible to say to what extent white and Negro graduates rated the same schools or different schools. The total number of Negro graduates was considered too small to warrant a more refined analysis, particularly in view of the attitudinal nature of the data.

Table 113 provides the response category percentages for each factor rated by the two races. A comparison of the percentages in the extreme categories, i.e. "excellent" and "poor," indicates that Negroes rated the following factors higher than white graduates: general condition of school, counseling given to students, teacher interest in students, school reputation in community and strictness in maintaining discipline. They rated school placement services lower than did white graduates. These ratings are more understandable when one realizes that many of the Negro graduates came from all-Negro schools or predominantly Negro schools.

The results of the analysis by race of graduate are particularly interesting because they fail to reveal a substantially lower opinion of school factors by Negro graduates. On the contrary, with some exceptions, the tendency is toward more favorable ratings from Negro graduates.

Table 113. RESPONSE PERCENTAGES, BY RACE OF GRADUATE, TO THE TEN SCHOOL FACTORS RATED BY VOCATIONAL GRADUATES

Factors of Former High Schools Rated By Graduates	Race of Graduate	RATING GIVEN TO ITEM							
		Poor		Satisfactory		Good		Excellent	
		N	%	N	%	N	%	N	%
Quality of instruction from shop instructors	White	140	2.9	544	11.6	1743	36.5	2340	49.0
	Negro	14	4.1	37	10.9	122	36.0	166	49.0
	Other	0	0.0	5	26.3	7	36.8	7	36.8
Quality of instruction from academic teachers	White	173	3.7	918	19.6	2510	53.6	1084	23.1
	Negro	11	3.5	46	14.5	182	57.4	78	24.6
	Other	2	10.5	3	15.8	9	47.4	5	26.3
Condition of shop facilities and equipment	White	347	7.3	896	18.8	1881	39.4	1645	34.5
	Negro	24	7.3	67	20.3	143	43.3	96	29.1
	Other	1	5.3	3	15.8	7	36.8	8	42.1
General physical condition of school	White	382	8.0	947	19.9	2100	44.1	1331	28.0
	Negro	18	5.4	38	11.4	139	41.7	138	41.4
	Other	1	5.3	1	5.3	12	63.2	5	26.3
Vocational counseling given to students	White	815	17.3	1175	24.9	1641	34.8	1090	23.1
	Negro	41	12.5	73	22.2	131	39.8	84	25.5
	Other	4	21.1	4	21.1	7	36.8	4	21.1
Help given students to find jobs	White	1016	22.5	1078	23.9	1257	27.9	1161	25.7
	Negro	83	25.5	93	28.5	94	28.8	56	17.2
	Other	5	29.4	6	35.3	4	23.5	2	11.8
Opportunity for extracurricular activities	White	424	9.1	1092	23.4	1977	42.5	1164	25.0
	Negro	31	9.5	81	24.8	124	37.9	91	27.8
	Other	1	5.9	5	29.4	9	52.9	2	11.8
Teacher's interest in student problems	White	398	8.6	1214	26.3	1828	39.7	1168	25.3
	Negro	24	7.3	73	22.3	129	39.4	101	30.9
	Other	1	5.3	6	31.6	8	42.1	4	21.1
School's reputation in the community	White	260	5.6	711	15.3	1831	39.5	1832	39.5
	Negro	16	4.8	41	12.3	114	34.3	161	48.5
	Other	3	15.8	3	15.8	6	31.6	7	36.8
School's strictness in maintaining discipline	White	276	5.9	911	19.6	2135	45.9	1332	28.6
	Negro	13	3.9	43	12.9	147	44.1	130	39.0
	Other	2	10.5	4	21.1	8	42.1	5	26.3

Analysis by Type of Graduate

Do vocational and academic graduates differ in terms of the attitude-toward-school measure? Do they differ in terms of the mean ratings of those items in common that comprised the attitude measure. * Table 114 presents the data.

Table 114. ATTITUDE INDEXES AND MEAN RATINGS OF THE RELATED HIGH SCHOOL FACTORS BY TYPE OF GRADUATE

(Compares vocational and academic course graduates from comprehensive schools.)

Factors of Former High Schools Rated By Graduates *		Type of Graduate					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
Quality of academic instruction		2100	3.0	.73	1738	3.0	.75
Physical condition of school		2150	3.0	.82	1756	2.9	.93
Student counseling		2125	2.7	1.02	1740	2.5	1.02
Placement services		2034	2.4	1.08	1588	2.2	.99
Extracurricular activities		2105	2.9	.87	1746	3.2	.80
Teacher's interest in students		2081	2.8	.91	1739	2.6	.90
Reputation in community		2100	3.3	.79	1749	3.2	.81
Strictness of discipline		2106	3.0	.82	1756	2.9	.85
Quality of school library		–	–	–	–	–	–
Condition of facilities & equipment		–	–	–	–	–	–
HIGH SCHOOL ATTITUDE INDEX		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	415	2.85	.57	393	2.72	.55
	1958	626	2.94	.52	440	2.80	.54
	1962	730	2.96	.52	341	2.89	.56
	Combined	1773	2.95	.55	1174	2.80	.55

* 4 = Excellent; 3 = Good; 2 = Satisfactory; and 1 = Poor

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* Two of the ten items differed for academic graduates. They are the last two items in Table 114. No comparison data are shown.

The high school attitude indexes are slightly but consistenly higher for the vocational course graduates. The individual differences, however, are not significant. The prudent conclusion is that the two types of graduates do not differ in terms of overall attitude toward their former schools. Both have a relatively high opinion of their former schools.

The mean ratings given the common school factors indicate that academic graduates rate opportunity for extracurricular activities higher. The shop load of the vocational course students makes this understandable. The vocational graduates, in turn, rate student counseling, placement services, and teacher interest in students higher. Both are reacting to the same schools; the analysis includes only the vocationals from the same comprehensive schools from which the academic graduates came.

Analysis by Individual School

To what extent are there school differences in the attitude-toward-school index? Table 115 shows frequency, percentage, and cumulative percentage distributions of the mean attitude scores for schools, based upon the attitude scores of graduates of 1953, 1958, and 1962.

The range of school mean attitude scores decreases with recency of graduation. For 1953 graduates, the school means range between 1.9 and 3.6, whereas for 1962 graduates, the means range from 2.5 to 3.6. For all years of graduation groups, most schools fall into a narrow range of 2.5 to 3.3.

In Chapter 3, it was shown that the differences between schools had an appreciable degree of stability. Some schools received consistently higher mean attitude scores, based upon ratings from their graduates, than other schools. The distribution of school means shown in Table 115 indicates that the school mean differences are not great. Nevertheless, the stable differences in school means on this measure raise the question of why.

The attitude measure correlates significantly with only one occupational measure, job satisfaction. It suggests that the differences in mean school attitude scores are more likely the result of differences between schools than

Table 115. ATTITUDE TOWARD FORMER HIGH SCHOOL: FREQUENCY DISTRIBUTION OF SCHOOL MEANS BY YEAR OF GRADUATION

Class Intervals For School Means of Attitude Index	YEAR OF GRADUATION								
	1953			1958			1962		
	N	%	C%	N	%	C%	N	%	C%
3.7-3.9	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0
3.4-3.6	3	3.3	100.0	2	1.1	100.0	4	4.0	100.0
3.1-3.3	21	23.1	96.7	26	26.0	98.0	35	35.0	96.0
2.8-3.0	38	41.7	73.6	46	46.0	72.0	47	47.0	61.0
2.5-2.7	23	25.3	31.9	22	22.0	26.0	13	13.0	14.0
2.2-2.4	3	3.3	6.6	3	3.0	4.0	1	1.0	1.0
1.9-2.1	3	3.3	3.3	0	0.0	1.0	0	0.0	0.0
1.6-1.8	0	0.0	0.0	1	1.0	1.0	0	0.0	0.0
1.3-1.5	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
1.0-1.2	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Number of Schools	91			100			100		
TOTAL MEAN	2.8			2.9			3.0		

of the post-graduation experiences of the graduates. Most likely, the determinants of the measure are the very kinds of factors upon which the measure is based, e.g. adequacy of shop facilities, instruction, placement services, vocational guidance, and other factors rated.

The relationship between school variables and ratings by graduates will be reported in a subsequent volume.

9

THEIR POST HIGH SCHOOL OCCUPATIONAL HISTORY

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CHAPTER 9 SUMMARY

Analysis of Employment Security

1. Year of graduation. Employment security is expressed as the per cent of employable time in months that has been spent in full-time employment. For all graduates, the median per cent of employment security is 95, indicating a high degree of employment security among vocational graduates.

2. Type of school. There is no significant difference between graduates of vocational and comprehensive schools in terms of employment security.

3. School enrollment. There is no significant difference in employment security between the graduates of small, medium, and large enrollment schools.

4. Race of graduate. Negro vocational graduates have significantly less employment security than white vocational graduates.

5. Academic graduates. When equated for college education, the vocational graduates have significantly greater employment security than the academic graduates, within the period covered by the survey.

Analysis of Employment Stability

6. Year of graduation. Employment stability is expressed as the average duration in months of employment per job held. The average duration was 46.5, 26.1, and 12.6 months respectively for the graduates of 1953, 1958, and 1962.

7. Type of school. There is no significant difference in employment stability, as defined, between graduates of vocational and comprehensive schools.

8. School enrollment. There is no significant difference in employment stability between graduates of small, medium, and large enrollment schools.

9. Race of graduate. Negro graduates have slightly less employment stability, as defined, than white vocational graduates.

10. Academic graduates. Vocational graduates have significantly greater employment stability than academic graduates.

(Continued in Appendix B)

CHAPTER BACKGROUND INFORMATION

Chapter 3 introduced ten measures, each of which describes a salient aspect of the graduates' occupational history since leaving high school. The ten measures are:

1. General placement
2. Related placement
3. Employment security
4. Employment stability
5. Job relatedness
6. Job satisfaction
7. Employment mobility
8. Earnings progression
9. Initial hourly earnings
10. Present hourly earnings

Reliability and stability estimates were reported for each measure in Chapter 3. In addition, the intercorrelations among the measures were reported.

Two of the measures, general placement and related placement, were analyzed further in Chapter 5 in terms of such basic variables as year of graduation, type of school attended, enrollment of school attended, race of graduate, and where appropriate, the type of graduate, i.e. vocational or academic. The balance of the measures, with the exception of employment mobility, are analyzed in this chapter in terms of the same variables.

A clarification is in order about the data used in this chapter. The data reported in the tables are based upon graduates who had six months or more of employable time between graduation from high school and June, 1964, the cut-off point for the survey. Those with less than six months of employable time, about 217 cases, were eliminated because their performance on some of the occupational measures was markedly different from that of the bulk of the graduates. Their inclusion into the data would have distorted mean values of the measures.

An example will illustrate the point. Among the 1962 graduates, a considerable number entered military service or full-time, post-high school education within a few months after graduation. Most of these made apparently little effort to find employment in the several month interval between high school and the service or continued full-time education. They were predominantly cases of zero employed time over the few months of employable time available to them. It would be a distortion of the employment security measure, for example, to include such cases. It is a reasonable conclusion to assume they were not looking for employment because they anticipated being in school or in the service within a few months after graduation. On the basis of this reasoning, the decision was made to include only those cases with six months or more of employable time in the analyses that comprise this chapter.

The above rule eliminated mainly some of the 1962 graduates, and a very few of the 1958 graduates who, because of a combination of military service and full-time school, did not have the minimum of six months of employable time as of June, 1964. No 1953 graduates were eliminated.

ANALYSIS OF EMPLOYMENT SECURITY

Introduction

To what extent are vocational graduates fully employed over their period of employable time? The measure of employment security was developed to describe that aspect of the graduate's employment history. The measure indicates what percentage of the graduate's total employable time since leaving high school was spent employed. Excluded from employable time are months of military service, full-time school attendance, and incapacitation because of hospitalization. Included in employed time are part-time jobs held during periods when no full-time jobs were held. The part-time job durations were equated to equivalent full-time months. For example, a part-time job of six months duration at twenty hours per week was transformed to three months of full-time employment. Thus, the employment security measure describes how much full-time employment or its equivalent a graduate has experienced since leaving high school, expressed as a percentage of total time in months available for employment.

Analysis by Year of Graduation

By year of graduation, what is the mean and median percentage of employment security for the graduates of 1953, 1958 and 1962? What is the frequency distribution? Table 116 provides the data.

The mean percentage of employment security is 92.7, 87.3 and 84.0 respectively for the graduates of 1953, 1958 and 1962. Comparable median values are 98, 95, and 92 respectively for 1953, 1958 and 1962 graduates. The skewed nature of the distribution of scores indicate the median values are a better measure of central tendency.

The data indicate that vocational graduates have a substantial degree of employment security. Eighty-one percent of the 1953 graduates enjoyed 91 percent or better employment security. Sixty-three percent of the 1958 graduates,

Table 116. EMPLOYMENT SECURITY: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Employment Security	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
91-100	828	80.7	80.7	896	63.1	63.1	970	57.0	57.0	2703	64.1	64.1
81- 90	96	9.3	90.0	241	17.0	80.1	264	15.5	72.5	605	14.7	78.8
71- 80	43	4.2	94.2	124	8.7	88.8	165	9.7	82.2	332	7.7	86.5
61- 70	21	2.0	96.2	50	3.5	92.3	90	5.3	87.5	161	4.6	91.1
51- 60	11	1.1	97.3	23	1.6	93.9	51	3.0	90.5	85	2.2	93.3
41- 50	6	0.6	97.9	17	1.2	95.1	48	2.8	93.3	71	1.7	95.0
31- 40	3	0.3	98.2	16	1.1	96.2	25	1.5	94.8	44	1.1	96.1
21- 30	1	0.1	98.3	12	0.9	97.1	23	1.3	96.1	36	0.9	97.0
11- 20	0	0.0	98.3	9	0.6	97.7	10	0.6	96.7	19	0.5	97.5
1- 10	3	0.3	98.6	3	0.2	97.9	6	0.4	97.1	12	0.3	97.8
0	14	1.4	100.0	30	2.1	100.0	49	2.9	100.0	93	2.2	100.0
Number	1026			1421			1701			4161		
Mean	92.67			87.30			84.0			89.30		
Median	98			95			92			95		
S.D.	15.46			20.21			23.18			20.73		

who left school in a period of economic recession which lasted for much of their employable time period, had 91 percent or better employment security. Their median employment security was 95 percent. While there are no absolute benchmarks to indicate what is good, fair or poor employment security, it would seem that the data testify to a high degree of employment security among vocational graduates. The employment security mean and median values would undoubtedly be substantially greater if the unemployed period prior the first full-time job were eliminated from the measure.

The mean employment security values for 1953, 1958 and 1962 graduates incorrectly suggest that employment security is increasingly a problem. The trend is an artifact attributable to the nature of the measure rather than a change in the basic economic conditions influencing employment security. The measure includes the period of unemployment that precedes the graduate's first full-time job. That period is, by the nature of the measure, increasingly a greater proportion of total employable time for 1953, 1958 and 1962 graduates. In other words, the measure penalizes the more recent graduates, and generates a meaningless trend. One cannot correctly compare the graduates of 1953, 1958 and 1962 on the measure as calculated. The comparison would be equitable only if employment security were calculated for, say, the first two years after graduation for the three groups.

Chapter 5 showed that general placement and related placement were influenced by the economy level at the time of graduation. More than likely, the employment security measure is similarly influenced. A modified use of the measure, as previously described, would be required to demonstrate the relationship. The problem will be pursued in a later report.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of employment security? Table 117 provides the data for each graduating class and for all graduating classes combined.

The slight differences are in employment security between graduates of comprehensive and vocational schools are not significant. Employment security appears to be unrelated to the type of school, i.e. comprehensive or vocational, attended by the graduates. The slight difference in favor of the vocational schools may possibly be a reflection of their better performance in placing graduates into jobs. If the measure were corrected for pre-first job unemployment, those differences would undoubtedly disappear. It is interesting to see that for the recession year graduates of 1958, there was no difference in the placement performance of the two types of schools. There is also no difference in the employment security between the 1958 graduates of the two schools.

Table 117. EMPLOYMENT SECURITY: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Employment Security		
		N	M	S.D.
1953	Vocational	622	93.6	12.9
	Comprehensive	404	91.2	18.6
1958	Vocational	808	87.2	19.5
	Comprehensive	613	87.5	21.1
1962	Vocational	1015	85.2	22.4
	Comprehensive	686	82.2	24.2
Combined	Vocational	2456	88.0	19.7
	Comprehensive	1705	86.3	22.1

Analysis by School Enrollment

Do vocational graduates of small, medium and large enrollment schools, as defined by this study, differ significantly in post-graduation employment security? Table 118 provides the data.

There is no consistent trend relating employment security to the enrollment of the former school. The conclusion is that school enrollment is unrelated to the employment security experienced by graduates within eleven years after graduation. Whatever the advantages of the small or large enrollment schools may be, they do not include greater employment security for graduates.

Table 118. EMPLOYMENT SECURITY: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Employment Security		
		N	M	S.D.
1953	< 500	358	92.5	16.6
	500 - 1500	386	93.4	12.6
	> 1500	282	92.0	17.3
1958	< 500	457	86.0	21.2
	500 - 1500	561	88.0	18.8
	> 1500	403	87.8	20.8
1962	< 500	570	85.4	22.1
	500 - 1500	615	83.1	23.2
	> 1500	516	83.4	24.2
Combined	< 500	1387	87.4	20.7
	500 - 1500	1571	87.5	19.8
	> 1500	1203	86.9	21.9

Analysis by Race of Graduates

How do white and Negro vocational graduates compare in terms of employment security? Table 119 provides the data.

It is clear that the Negro vocational course graduate experiences substantially less employment security than the white graduate. This is so for each of the three graduating classes. For the combined graduates, white graduates were employed 88 percent of their employable time, whereas Negro graduates were employed only 78.8 percent of their employable time. Much of the difference is attributable to the longer time required by the Negro graduate to find his first full-time job. Data on the latter were presented in Chapter 5. Negro graduates required almost three times as long as white graduates to find their first full-time job. Even then, a relatively small percent found jobs in the trade studied or highly related trades.

Table 119. EMPLOYMENT SECURITY: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Employment Security N	M	S.D.
1953	White	981	93.0	15.2
	Negro	33	84.6	19.6
	Other	3	89.7	13.2
1958	White	1302	87.9	19.3
	Negro	86	81.7	26.3
	Other	4	82.0	21.9
1962	White	1535	84.9	22.4
	Negro	120	75.0	27.5
	Other	5	61.6	41.3
Combined	White	3830	88.0	20.0
	Negro	240	78.8	26.4
	Other	12	75.4	32.6

Analysis by Type of Graduate

How do vocational and academic course graduates compare in terms of employment security? Table 120 provides the data for the two types of graduates, without consideration for the amount of post-high school education obtained. It must be remembered that a majority of the academic graduates have some college education, and many have completed four years of college.

For each of the year of graduation groups, the vocational course graduates experience greater employment security than the academic course graduates. For the combined graduates, the vocational course graduates were employed 87.3 per cent of their employable time, whereas the academic graduates were employed 83.2 percent of their employable time. The difference is greatest for the 1962 graduates, and least for the 1953 graduates. This suggests that a substantial amount of the employment security difference is the result of the greater difficulty that academic graduates have in finding the first full-time job.

Table 120. EMPLOYMENT SECURITY: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Employment Security		
		N	M	S.D.
1953	Vocational	1026	92.7	15.5
	Academic	364	90.1	17.0
1958	Vocational	1421	87.3	20.2
	Academic	410	82.7	24.3
1962	Vocational	1701	84.0	23.2
	Academic	324	76.2	30.2
Combined	Vocational	4161	87.3	20.7
	Academic	1098	83.2	24.8

How do vocational and academic graduates who have had no college education compare in terms of employment security? Table 121 provides the data.

Vocational graduates without any college education experience significantly greater employment security than academic graduates without a college education. The difference in employment security is slightly greater than when the two types of graduates are compared without regard for post-high school education. For the combined year of graduation groups, the vocational course graduates were employed 88.0 percent of their employable time, whereas the non-college, academic graduates were employed 82.1 percent of their employable time.

While much of the difference is attributable to the greater difficulty that academic graduates have in finding a job after high school, it also reflects greater unemployment during the total employable time period. The

Table 121. EMPLOYMENT SECURITY: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (Based on graduates with no college education who have ≧ 6 months employable time.)

Year of Graduation	Type of Graduate	Employment Security		
		N	M	S.D.
1953	Vocational	819	93.5	14.4
	Academic	149	89.6	20.0
1958	Vocational	1188	88.0	19.5
	Academic	212	83.2	21.4
1962	Vocational	1528	85.0	22.1
	Academic	230	76.2	29.0
Combined	Vocational	3548	88.0	19.9
	Academic	591	82.1	24.9

average duration of jobs held by vocational graduates is significantly greater than the duration of jobs held by academic graduates. Since some amount of between job unemployment is a reasonable expectation, it can be concluded that the difference in employment security experienced by the two types of graduates is not wholly the result of differences in time required to find the first job. Academic graduates without a college education take longer than comparable vocational graduates to find their first full-time job, and have more between job unemployment, with the net result that they have less employment security. Whether this continues to be the case after the first eleven years of employment is undetermined.

ANALYSIS OF EMPLOYMENT STABILITY

Introduction

To what extent are vocational graduates stably employed in the sense of continued employment with relatively few, or even one, employer? The measure of employment stablity developed to describe this aspect of the vocational graduate's employment history was the average duration in months of employment per full-time employer. The graduate's score on the measure is obtained by dividing his total months of full-time equivalent employment since graduation by the number of full-time jobs (employers) held during this period. The number of full-time jobs held is analyzed separately in the next section of this chapter.

The employment stability measure, as defined above, was shown in Chapter 3 to be significantly related to employment security, i.e. the greater the average duration per job, the greater employment security; and to job relatedness, i.e. the more the jobs held were related to the trade studied, the greater the duration of the jobs held. The measure proved to be unrelated to job satisfaction and earnings progression as defined in this study.

The reliability estimates reported for the measure in Chapter 3 were low but statistically significant at the five percent level of confidence. Stability estimates were not significant, indicating that differences in the measure between schools were not stable over the years covered by the survey. These findings forced the conclusion that the measure was of questionable value for evaluative purposes. The present section continues the analysis of the measure in terms of the basic study variables.

Analysis by Year of Graduation

By year of graduation, what is the mean and median duration per full-time job held by vocational graduates? Table 122 shows a frequency distribution of the number, percent and cumulative percent of graduates in class

Table 122. EMPLOYMENT STABILITY: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Job Stability	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
136-150	3	0.3	0.3	0	0.0	0.0	0	0.0	0.0	3	0.1	0.1
121-135	78	7.5	7.8	1	0.1	0.1	0	0.0	0.0	79	1.9	2.0
106-120	49	4.7	12.5	0	0.0	0.1	0	0.0	0.0	50	1.2	3.2
91-105	22	2.1	14.6	0	0.0	0.1	0	0.0	0.0	24	0.6	3.8
76- 90	21	2.0	16.6	2	0.1	0.2	0	0.0	0.0	23	0.5	4.3
61- 75	91	8.8	25.4	144	10.2	10.4	0	0.0	0.0	235	5.7	10.0
46- 60	93	9.0	34.4	69	4.9	15.3	0	0.0	0.0	162	3.9	13.9
31- 45	235	22.6	57.0	220	15.5	30.8	9	0.5	0.5	469	11.3	25.2
16- 30	325	31.3	88.3	464	32.8	63.6	522	31.0	31.5	1315	31.6	56.8
0- 15	121	11.7	100.0	516	36.4	100.0	1154	68.5	100.0	1792	43.2	100.0
Number	1038			1416			1685			4152		
Mean	46.52			26.12			12.57			25.78		
Median	34			21			11			18		
S.D.	34.93			19.10			7.45			25.20		

intervals of fifteen month job durations. Mean and median job duration values are also given.

The small number of cases in each year of graduation group that appear to have a job duration in excess of what would be the maximum if only one job were held from immediately after graduation to the June, 1964 cut-off date are cases that for a period, held two jobs, the second job usually being a part-time job. The small number of such cases did not make it worthwhile to parcel out employed time accumulated by second jobs.

The average duration per full-time jobs was 12.8, 26.1 and 46.5 months respectively for 1962, 1958 and 1953 graduates. These values suggest that the 1953 graduates, with a possible 132 months of employable time, have held on an average only one job more than the 1962 graduates, with a possible 24 months of employable time. Apparently, vocational graduates do not change employers frequently. The changes tend to come in the early years after graduation.

Analysis by Type of School

Do vocational graduates of comprehensive and vocational schools differ significantly in employment stability? The question is raised because there may be something about either type of school that predisposes graduates to greater employment stability. Table 123 provides the data.

Table 123. EMPLOYMENT STABILITY: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Job Stability		
		N	M	S.D.
1953	Vocational	632	44.4	32.8
	Comprehensive	406	49.9	37.8
1958	Vocational	810	26.2	19.8
	Comprehensive	607	25.9	18.0
1962	Vocational	1005	12.6	7.6
	Comprehensive	680	12.4	7.2
Combined	Vocational	2458	25.4	24.4
	Comprehensive	1695	26.3	26.3

For the three graduating classes, there is no consistent difference favoring one or the other type of schools. The differences are not significant. The conclusion is that the type of school attended is unrelated to future employment stability, as herein defined.

Analysis by School Enrollment

Do vocational graduates of small, medium and large enrollment schools, as defined in this study, differ in terms of employment stability? The existence of a relationship between school enrollment and employment stability would raise the further question of why. Table 124 provides the data.

Table 124. EMPLOYMENT STABILITY: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Job Stability		
		N	M	S.D.
1953	< 500	360	43.5	33.6
	500 - 1500	398	46.2	33.1
	> 1500	280	50.9	38.5
1958	< 500	455	24.7	18.4
	500 - 1500	566	26.4	19.8
	> 1500	396	27.2	18.8
1962	< 500	565	13.2	7.8
	500 - 1500	609	12.0	7.1
	> 1500	511	12.5	7.4
Combined	< 500	1382	24.9	24.8
	500 - 1500	1582	26.0	25.0
	> 1500	1189	26.5	26.7

For the graduates of 1953 and 1958, mean employment stability increases with increased enrollment. The differences, however, are slight, and do not appear for the 1962 graduates. The prudent conclusion is that school enrollment is only slightly, if at all, related to employment stability of graduates. It may be that more of the small enrollment schools are located in areas of relative economic instability, causing graduates to change employers more frequently. The magnitude of the differences in employment stability hardly warrant further speculation as to why.

Analysis by Race of Graduate

How do white and Negro vocational graduates compare in terms of employment stability? It has been said that Negroes are the last to be hired and the first to be laid off in the ups and downs of the economic cycle. If that is so, it should be reflected in the employment stability comparison. Table 125 provides the data.

Table 125. EMPLOYMENT STABILITY: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Job Stability		
		N	M	S.D.
1953	White	990	46.7	35.1
	Negro	36	39.2	27.9
	Other	3	59.7	51.2
1958	White	1301	26.2	19.2
	Negro	85	24.0	17.1
	Other	4	26.8	25.8
1962	White	1524	12.6	7.5
	Negro	118	11.2	6.6
	Other	5	19.0	12.0
Combined	White	3827	26.2	25.5
	Negro	240	20.0	18.5
	Other	12	31.8	34.8

In each of the three year of graduation groups, the mean employment stability for Negro graduates is less than for white graduates. For all years combined, the mean job duration of white graduates is 26.2 months versus 20.0 for Negro graduates. The conclusion is that Negro graduates enjoy less employment stability than white graduates. The differences, however, are not substantial. For example, for the 1962 graduates, the mean job duration for white graduates was only 1.5 months greater than that for Negro graduates; and for 1958 graduates, the mean job duration was only 2.2 months greater for white graduates. Thus, the Negro has less employment stability, but not much less.

Analysis by Type of Graduate

How do vocational and academic course graduates compare in terms of average duration of full-time jobs? Table 126 provides the data for the two types of graduates. The two groups are not equated in terms of amount of post-high school college and non-college education.

Table 126. EMPLOYMENT STABILITY: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Job Stability		
		N	M	S.D.
1953	Vocational	1038	46.5	34.9
	Academic	374	37.0	28.7
1958	Vocational	1416	26.1	19.1
	Academic	400	20.3	15.4
1962	Vocational	1685	12.6	7.4
	Academic	301	11.2	6.9
Combined	Vocational	4153	25.8	25.2
	Academic	1075	23.6	22.3

For each year of graduation groups, the mean full-time job duration is greater for vocational than for academic graduates. As defined, vocational graduates experience greater employment stability. The difference in employment stability increases with number of years out of school, being 1.4, 5.3, and 9.5 months respectively for 1962, 1958 and 1953 graduates.

How do the two types of graduates compare in employment stability when neither group has any college education? Table 127 provides the data.

Table 127. EMPLOYMENT STABILITY: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (Based on graduates with no college education who have $\overline{\overline{>}}$ 6 months employable time.)

Year of Graduation	Type of Graduate	Employment Stability		
		N	M	S.D.
1953	Vocational	826	49.2	35.8
	Academic	150	45.1	35.8
1958	Vocational	1189	27.2	19.7
	Academic	210	24.1	17.6
1962	Vocational	1524	12.9	7.5
	Academic	219	11.7	7.2
Combined	Vocational	3552	26.2	25.6
	Academic	579	24.8	25.2

Vocational graduates still have a greater mean job duration than academic graduates. However, the differences are less. They are 1.2, 3.1, and 4.1 months respectively for 1962, 1958 and 1953 graduates. This suggests that, within the period of years studied, average job duration is less for those with a college education than those with no college, whether they be vocational or academic graduates. A possible explanation is that those with a college education may be more inclined to "explore" different employers before settling down to a career advancement. Whatever the explanation, vocational graduates appear to stay longer with their employers than do academic graduates.

ANALYSIS OF NUMBER OF JOBS HELD

Introduction

The preceding section was concerned with employment stability defined in terms of average duration of job (employer). Employment stability may be alternatively defined as the number of jobs held, where a job is further defined as an association with an employer rather than with a position title held. Thus, a graduate who has had full-time employment with two employers since graduation has had, by this definition, two jobs.

Because it may be of general interest to know the number of full-time jobs vocational graduates have had in a maximum of two, six and eleven years of employable time, depending upon year of graduation, the variable has been subjected to the same analysis as the occupational derived measures. The two variables, average duration of jobs held and number of full-time jobs held, are as one would expect highly correlated. The findings of the analyses in this section should correspond with the analyses of the preceding section.

Analysis by Year of Graduation

By year of graduation groups, what are the mean and median number of full-time jobs held by vocational graduates? Table 128 shows a frequency distribution of the number, percentage and cumulative percentage of graduates in each number of jobs category. It also give the mean and median values.

The mean number of full-time jobs held by 1962, 1958 and 1953 graduates are respectively 1.96, 2.48 and 3.08. In eleven years, the average graduate has held only three full-time jobs. Indeed, 65.8 percent of the 1953 graduates have held three or fewer full-time jobs. On the whole, vocational graduates do not do much moving from employer to employer.

Table 128. NUMBER OF JOBS HELD: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

No. Full-Time Jobs	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
10	10	0.9	100.0	6	0.4	100.0	1	0.1	100.0	17	0.4	100.0
9	6	0.5	99.1	3	0.2	99.6	1	0.1	99.9	10	0.2	99.6
8	15	1.4	98.6	2	0.1	99.4	0	0.0	99.8	17	0.4	99.4
7	25	2.2	97.2	8	0.5	99.3	4	0.2	99.8	37	0.9	99.0
6	58	5.2	95.0	39	2.6	98.8	18	1.0	99.6	115	2.6	98.1
5	99	8.9	89.8	96	6.4	96.2	41	2.3	98.6	237	5.4	95.5
4	168	15.1	80.9	158	10.6	89.8	100	5.7	96.3	427	9.7	90.1
3	234	21.0	65.8	293	19.7	79.2	269	15.2	90.6	798	18.2	80.4
2	263	23.6	44.8	423	28.4	59.5	557	31.6	75.4	1245	28.4	62.2
1	236	21.2	21.2	463	31.1	31.1	773	43.8	43.8	1479	33.8	33.8
Number	1114			1491			1764			4382		
Mean	3.08			2.48			1.96			2.42		
Median	3			2			2			2		
S.D.	1.84			1.50			1.14			1.53		

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of the mean number of full-time jobs held since graduation? Table 129 provides the data.

There are no significant differences in the mean number of full-time jobs held by the graduates of the two types of schools. Whatever differences may characterize vocational education in the two types of schools, they are not reflected in the number of full-time jobs held by graduates from two to eleven years out of school.

Table 129. NUMBER OF JOBS HELD: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	No. of Full-Time Jobs		
		N	M	S.D.
1953	Vocational	689	3.2	1.8
	Comprehensive	425	3.0	1.9
1958	Vocational	858	2.4	1.4
	Comprehensive	634	2.6	1.6
1962	Vocational	1050	2.0	1.2
	Comprehensive	714	1.9	1.1
Combined	Vocational	2608	2.4	1.5
	Comprehensive	1775	2.4	1.6

Analysis by School Enrollment

Do vocational graduates of small, medium and large enrollment schools, as defined in this study, differ in terms of number of full-time jobs held over comparable time periods? Table 130 provides the data.

The differences in mean number of jobs held are not significant in any of the year of graduation groups. The conclusion is that size of school enrollment is unrelated to the number of jobs held by graduates within periods from two to eleven years after graduation.

Analysis by Race of Graduates

How do white and Negro graduates compare in terms of the mean number of full-time jobs held over comparable time periods? Table 131 provides the data.

Table 130. NUMBER OF JOBS HELD: COMPARISON OF SMALL, MEDIUM, AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	No. of Full-Time Jobs		
		N	M	S.D.
1953	< 500	401	3.2	1.8
	500 - 1500	419	2.9	1.7
	> 1500	294	3.1	2.0
1958	< 500	491	2.4	1.4
	500 - 1500	589	2.5	1.6
	> 1500	412	2.5	1.5
1962	< 500	594	2.0	1.2
	500 - 1500	637	2.2	1.2
	> 1500	533	1.9	1.1
Combined	< 500	1488	2.5	1.5
	500 - 1500	1654	2.4	1.5
	> 1500	1241	2.4	1.6

Table 131. NUMBER OF JOBS HELD: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	No. of Full-Time Jobs		
		N	M	S.D.
1953	White	1063	3.1	1.9
	Negro	39	2.5	1.3
	Other	3	2.7	1.7
1958	White	1364	2.5	1.5
	Negro	92	2.6	1.4
	Other	4	2.8	1.5
1962	White	1589	2.0	1.2
	Negro	129	2.0	1.1
	Other	5	1.4	.5
Combined	White	4028	2.4	1.6
	Negro	261	2.3	1.3
	Other	12	2.2	1.4

For all graduates combined, the mean number of jobs held by Negro and white graduates are 2.36 and 2.44 respectively. The difference is not statistically significant. Differences by year of graduation groups are similarly lacking in significance. The conclusion is that race of vocational graduates is unrelated to the number of full-time jobs held within a given period of years. The reason Negro graduates had a substantially smaller average duration per job held, as indicated in the preceding section on employment stability, is that he had a smaller amount of total employed time than the white graduate. It is clear that whether the Negro has more or less employment stability depends upon how the concept is defined. Defined as average duration per job, he has less employment stability. Defined as the number of jobs held, there is no difference in employment stability between the two races.

Analysis by Type of Graduate

How do vocational and academic course graduates compare in terms of number of full-time jobs held within periods of two to eleven years after graduation? Table 132 provides the data for graduates who have no college education.

Table 132. NUMBER OF JOBS HELD: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES WHO HAVE HAD NO COLLEGE EDUCATION

Year of Graduation	Type of Graduate	Number of Jobs		
		N	M	S.D.
1953	Vocational	889	3.1	1.9
	Academic	164	2.9	1.8
1958	Vocational	1260	2.5	1.5
	Academic	238	2.3	1.3
1962	Vocational	1596	2.0	1.2
	Academic	226	2.0	1.2
Combined	Vocational	3758	2.4	1.5
	Academic	628	2.3	1.4

The differences in mean number of jobs held are not significant in any of the year of graduation categories. Apparently, academic course graduates are no more inclined to move from employer to employer than are vocational graduates. The number of full-time jobs that a high school graduate holds in his first eleven years of work is unrelated to the type of school attended, the enrollment of the school attended, the race of the graduate, or even the type of program he took in school. It is probably related to personal characteristics of the graduate.

In the preceding section on employment stability, academic graduates were reported to have a smaller average duration per job held, and therefore, less employment stability than vocational graduates. This is not at variance with the finding that there is no difference in number of jobs held by the two types of graduates. The apparent contradiction results from the finding that academic graduates have less total employed time than vocational graduates. That would give them a smaller average duration per job, if there is no difference in the number of jobs held.

ANALYSIS OF JOB SATISFACTION

Introduction

To what extent are vocational graduates satisfied with the jobs they have held since leaving high school? The measure of job satisfaction used to describe the satisfaction dimension of the graduate's occupational history was derived as follows: For each job held, the graduate was asked to rate his general satisfaction with the job in terms of four categories, i.e. very satisfied, satisfied, dissatisfied or very dissatisfied. The categories were weighted 4, 3, 2 and 1 respectively. The graduate's job satisfaction score was the mean of the separate job satisfaction ratings. Thus, a score of 4 indicates the graduate reported himself to be "very satisfied" with all jobs held, whereas a score of 1 would indicate he was "very dissatisfied" with all jobs held.

In Chapter 3, the reliability and stability of the job satisfaction measure were established. It was also shown that the measure correlated significantly with job relatedness, i.e. the more the jobs held by a graduate were related to the trade studied, the greater the job satisfaction reported. The measure also correlated significantly with present earnings at the time of the survey, i.e. the greater the hourly earnings, the greater the job satisfaction reported. It proved to be unrelated to employment security, employment stability, earnings progression and job mobility.

The present section continues the analysis of the measure in terms of the basic study variables.

Analysis by Year of Graduation

How are the job satisfaction scores distributed within each year of graduation group? What is the mean and median job satisfaction score for each year of graduation group? Table 133 provides the data.

Table 133. JOB SATISFACTION: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Job Satisfaction	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
4.0	230	20.8	20.8	320	21.7	21.7	416	23.9	23.9	969	22.3	22.3
3.7-3.9	54	4.9	25.7	49	3.3	25.0	35	2.0	25.9	134	3.2	25.5
3.4-3.6	127	11.5	37.2	151	10.2	35.2	141	8.1	34.0	419	9.8	35.3
3.1-3.3	131	11.8	49.0	117	7.9	43.1	68	3.9	37.9	318	7.3	42.6
2.8-3.0	358	32.3	81.3	490	33.3	76.4	597	34.2	72.1	1449	33.4	76.0
2.5-2.7	105	9.5	90.8	152	10.3	86.7	191	11.0	83.1	448	10.3	86.3
2.2-2.4	32	2.9	93.7	51	3.5	90.2	55	3.1	86.2	139	3.2	89.5
1.9-2.1	49	4.4	98.1	112	7.6	97.8	160	9.2	95.4	322	7.4	96.9
1.6-1.8	5	0.4	98.5	5	0.3	98.1	10	0.6	96.0	20	0.5	97.4
1.3-1.5	4	0.4	98.9	7	0.5	98.6	23	1.3	97.3	34	0.8	98.2
1.0-1.2	12	1.1	100.0	19	1.3	100.0	47	2.7	100.0	79	1.8	100.0
Number	1107			1473			1743			4336		
Mean	3.19			3.13			3.06			3.12		
Median	3.0			3.0			3.0			2.9		
S.D.	.61			.66			.74			.68		

The mean job satisfaction scores for 1953, 1958 and 1962 graduates are 3.19, 3.13 and 3.06 respectively. The scores indicate widespread satisfaction with jobs held in each of the year of graduation groups. This is further indicated by the percentage of graduates with job satisfaction scores of 2.8 or higher. Those percentages are 81.3, 76.4 and 72.1 for the graduates of 1953, 1958 and 1962 respectively. It can be concluded that the great majority of vocational graduates report considerable satisfaction with the jobs they have held. This does not mean that a more analytic approach to the job satisfaction of vocational graduates would not reveal areas of dissatisfaction. It does indicate an overall satisfaction with jobs held.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of reported job satisfaction? Table 134 provides the data.

Table 134. JOB SATISFACTION: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Job Satisfaction		
		N	M	S.D.
1953	Vocational	684	3.19	.58
	Comprehensive	423	3.19	.65
1958	Vocational	847	3.16	.64
	Comprehensive	627	3.09	.68
1962	Vocational	1039	3.09	.73
	Comprehensive	704	3.02	.76
Combined	Vocational	2581	3.14	.66
	Comprehensive	1756	3.08	.71

For each of the year of graduation groups, the difference in reported job satisfaction between the graduates of the two types of schools is not significant. The conclusion is that the type of school attended, i.e. comprehensive or vocational has no bearing on job satisfaction experienced from two to eleven years after graduation.

Analysis by School Enrollment

Do graduates of small, medium and large enrollment schools, as defined by this study, differ significantly in reported job satisfaction? Table 135 provides the data.

Table 135. JOB SATISFACTION: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Job Satisfaction		
		N	M	S.D.
1953	< 500	400	3.17	.55
	500 - 1500	415	3.18	.65
	> 1500	292	3.22	.62
1958	< 500	485	3.16	.63
	500 - 1500	583	3.11	.66
	> 1500	406	3.11	.68
1962	< 500	587	3.08	.77
	500 - 1500	630	3.00	.71
	> 1500	526	3.10	.73
Combined	< 500	1474	3.13	.67
	500 - 1500	1637	3.09	.68
	> 1500	1226	3.13	.69

Within each year of graduation group, the mean job satisfaction ratings for the three enrollment categories are not significantly different. The conclusion is that the enrollment of the school attended is unrelated to job satisfaction experienced from two to eleven years after graduation.

Analysis by Race of Graduate

How do white and Negro graduates compare in terms of reported job satisfaction? Table 136 provides the data.

For each year of graduation group, the mean job satisfaction reported by Negro graduates is less than that reported by white graduates. While the differences are not great, their consistency forces the conclusion that Negro vocational graduates tend to experience less job satisfaction than white graduates. The conclusion is internally consistent with the finding that job

Table 136. JOB SATISFACTION: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Job Satisfaction		
		N	M	S.D.
1953	White	1056	3.20	.60
	Negro	39	2.95	.89
	Other	3	3.03	.68
1958	White	1351	3.15	.64
	Negro	90	2.84	.80
	Other	4	3.00	.44
1962	White	1570	3.09	.72
	Negro	128	2.69	.84
	Other	5	3.10	.49
Combined	White	3989	3.14	.67
	Negro	258	2.78	.84
	Other	12	3.05	.53

satisfaction correlates positively with job relatedness, and that a smaller percentage of Negroes than whites enter the trade for which trained. The satisfaction that comes from working in the trade studied is mainly denied to the Negro graduate.

Analysis by Type of Graduate

How do vocational and academic course graduates compare in terms of reported job satisfaction. Table 137 provides the data.

Within each of the year of graduation group, the difference in mean job satisfaction between vocational and academic graduates is not significant. The conclusion is that the type of program, i.e. vocational or academic, taken in high school is unrelated to job satisfaction up to eleven years after graduation.

Table 137. JOB SATISFACTION: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Job Satisfaction N	M	S.D.
1953	Vocational	1107	3.19	.61
	Academic	385	3.19	.64
1958	Vocational	1473	3.13	.66
	Academic	421	3.07	.71
1962	Vocational	1743	3.06	.74
	Academic	301	2.92	.78
Combined	Vocational	4336	3.12	.68
	Academic	1107	3.07	.72

Table 138 shows a comparison of vocational and academic course graduates, who have not attended college, in terms of job satisfaction reported. Within each year of graduation group, vocational graduates have a higher, but not significantly higher mean job satisfaction rating. The consistency of the difference suggests vocational graduates experience slightly more job satisfaction than academic graduates who have had no college education. The differences are too small, however, to make much about them.

Table 138. JOB SATISFACTION: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (Based on graduates with no college education who have ≥ 6 months employable time.)

Year of Graduation	Type of Graduate	Job Satisfaction		
		N	M	S.D.
1953	Vocational	884	3.20	5.8
	Academic	160	3.00	6.7
1958	Vocational	1244	3.12	6.4
	Academic	232	3.03	6.9
1962	Vocational	1575	3.07	7.3
	Academic	223	2.92	7.6
Combined	Vocational	3716	3.12	6.7
	Academic	615	2.98	7.1

ANALYSIS OF JOB RELATEDNESS

Introduction

To what extent do vocational graduates hold jobs related to the trade studied within periods of two, six and eleven years after graduation? The measure of job relatedness that was developed to describe this dimension of the vocational graduate's occupational history was derived as follows: For each job reported, the graduate was asked to rate its relation to the trade studied, i.e. same trade, highly related trade, slightly related trade, or completely unrelated trade. The relatedness categories were weighted [illegible], 3, 2 and 1 respectively. The graduate's job relatedness score was the mean of such ratings. Thus, a score of 4 indicates that all jobs held by the graduate were in the trade studied, whereas a score of 1 indicates all jobs held were in a trade completely unrelated to the trade studied.

In Chapter 3, the reliability and stability of the measure were established. The measure was also shown to be significantly correlated with related placement, i.e. the more related the first job is to the trade studied, the more related all jobs held are to the trade studied; with employment security, i.e. the more related all jobs held are to the trade studied, the greater is employment security; with employment stability, i.e. the more related all jobs held are to the trade studied, the greater the average duration in months per job held; with job satisfaction, the more related all jobs held are to the trade studied, the greater the satisfaction reported for the jobs held; and with present earnings, i.e. the more related all jobs held are to the trade studied, the higher hourly earnings at the end of two, six and eleven years after graduation. It is these relationships that testify for the importance of the job relatedness concept.

The present section continues the analyses of the measure in terms of the basic study variables.

Analysis by Year of Graduation

Within each year of graduation group, how is the job relatedness measure distributed? What are the mean and median relatedness scores? Table 139 provides the data.

Table 139. JOB RELATEDNESS: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Job	YEAR OF GRADUATION											
Relatedness	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
4.0	148	13.4	13.4	212	14.4	14.4	343	19.8	19.8	707	16.3	16.3
3.7-3.9	14	1.3	14.7	15	1.0	15.4	11	0.6	20.4	40	0.9	17.2
3.4-3.6	33	3.0	17.7	28	1.9	17.3	35	2.0	22.4	97	2.2	19.4
3.1-3.3	28	2.5	20.2	32	2.2	19.5	14	0.8	23.2	74	1.7	21.1
2.8-3.0	139	12.5	32.7	202	13.7	33.2	270	15.6	38.8	612	14.2	35.3
2.5-2.7	93	8.4	41.1	97	6.6	39.8	115	6.6	45.4	305	7.0	42.3
2.2-2.4	56	5.1	46.2	47	3.2	43.0	48	2.8	48.2	151	3.5	45.8
1.9-2.1	168	15.2	61.4	225	15.3	58.3	245	14.1	62.3	639	14.8	60.6
1.6-1.8	82	7.4	68.8	76	5.2	63.5	65	3.7	66.0	224	7.9	65.8
1.3-1.5	94	8.5	77.3	132	8.9	72.4	115	6.6	72.6	342	7.9	73.7
1.0-1.2	251	22.7	100.0	407	27.6	100.0	475	27.4	100.0	1137	26.3	100.0
Number	1106			1473			1736			4328		
Mean	2.3			2.2			2.3			2.3		
Median	2.0			2.0			2.0			1.9		
S.D.	1.01			1.05			1.11			1.07		

The mean job relatedness is 2.3, 2.2 and 2.3 respectively for the graduates of 1953, 1958 and 1962. Thus, the average relationship between jobs held and trades studied in high school is only a little better than "slightly related." This is in agreement with the earlier finding that only about 30 percent of the graduates obtain their first job in the trade studied, and of those whose first job is not in the trade studied, very few ever enter the trade in later years.

The percentage distributions indicate that, for the 1953, 1958 and 1962 graduates respectively, only 13.4, 14.4 and 19.8 percent of the graduates have held all of their full-time jobs in the trade studied. The figures indicate that even those who start out in the trade studied in high school do not necessarily stay with the trade. On the other hand, about one-third of the 1953 graduates have relatedness scores that indicate all work has been in the same or highly related trade. The comparable proportions for 1958 and 1962 graduates are somewhat greater. That is because the latter graduates have had fewer years in which to move out of the trade studied or highly related trades.

The overall conclusion is that the great majority of vocational course graduates do not work in the trade studied. Moreover, the majority does not work in either the trade studied or highly related trades. Most jobs held are in slightly related or completely unrelated trades, where relatedness is judged by the graduates. The conclusion is in contradiction to the findings generally reported by graduate follow-up studies. Perhaps that is because so few follow-up studies have been concerned with jobs beyond the first job after graduation.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of the job relatedness measure? Table 140 provides the data.

For the 1953, 1958 and 1962 graduates, those who attended vocational schools have a greater mean job relatedness score than those who attended comprehensive schools. While the differences are not substantial, they are consistent, and suggest that vocational school graduates are more likely to work in the trade studied or highly related trades than comprehensive school graduates. The conclusion is consistent with the finding, reported in Chapter 5, that vocational schools do a better job of placing their graduates in the same trade studied or highly related trades.

Table 140. JOB RELATEDNESS: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Job Relatedness		
		N	M	S.D.
1953	Vocational	685	2.35	1.01
	Comprehensive	421	2.10	1.01
1958	Vocational	846	2.31	1.06
	Comprehensive	628	2.06	1.03
1962	Vocational	1035	2.45	1.12
	Comprehensive	701	2.14	1.07
Combined	Vocational	2577	2.38	1.07
	Comprehensive	1752	2.10	1.04

Analysis by School Enrollment

Do the graduates of small, medium and large enrollment schools differ significanly in terms of the relatedness of jobs held to trades studied in high school? Table 141 provides the data.

The three year of graduation groups show no consistent trend relating school enrollment to job relatedness, although the graduates from schools with enrollments less than 500 have slightly but consistently higher mean job relatedness scores. This may be a reflection of the possibility that small enrollment schools are located in communities where there is less diversity and growth of job opportunity to attract graduates away from the trades studied. Whatever the explanation, the data do not make a strong case for the interpretation that school enrollment has a bearing on the likelihood that graduates will enter the trades studied or highly related trades.

Table 141. JOB RELATEDNESS: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Job Relatedness		
		N	M	S.D.
1953	< 500	401	2.28	.96
	500 - 1500	415	2.26	1.05
	> 1500	290	2.22	1.03
1958	< 500	483	2.29	1.08
	500 - 1500	584	2.16	1.03
	> 1500	407	2.16	1.04
1962	< 500	584	2.47	1.16
	500 - 1500	629	2.23	1.09
	> 1500	523	2.28	1.07
Combined	< 500	1470	2.36	1.08
	500 - 1500	1637	2.21	1.06
	> 1500	1222	2.23	1.05

Analysis by Race of Graduate

How do white and Negro graduates compare in terms of the relatedness of jobs held to trades studied? Table 142 provides the data.

Within each year of graduation group, the Negro graduates have a substantially lower mean job relatedness score than white graduates. Since both races study essentially the same trades and attend, with some exceptions, the same schools, it seems reasonable to conclude that being a Negro is sufficient condition to be disadvantaged from the standpoint of working in the trade studied or highly related trades. The finding does not augur well for efforts to upgrade the economic status of Negroes through trade training. Unless they are accepted more widely into the trades studied, such training is not likely to result in job upgrading for the Negro. Indeed, such training may even add to the resentment and unrest found among many Negroes. If

Table 142. JOB RELATEDNESS: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Job Relatedness		
		N	M	S.D.
1953	White	1055	2.28	1.01
	Negro	39	1.77	.91
	Other	3	2.17	1.31
1958	White	1351	2.23	1.06
	Negro	90	1.81	.95
	Other	4	1.40	.69
1962	White	1564	2.36	1.11
	Negro	128	1.88	1.04
	Other	5	2.40	1.36
Combined	White	3982	2.29	1.07
	Negro	258	1.84	1.00
	Other	12	2.01	1.24

they find such training cannot be put to use, there may be an even more intense embitterment. There is little point in training people to step up, and then denying them the opportunity to do so.

Lest there be any misunderstandings, the reader is reminded that the Negro graduates included in this amd similar analyses herein, are not drawn exclusively from any one region of the country. The findings generalize to all regions of the country.

ANALYSIS OF INITIAL EARNINGS

Introduction

About what hourly earnings can the vocational course graduate expect when he starts his first full-time job after graduation? That would depend, of course, upon the trade he enters as well as other factors known to influence initial earnings. However, a general answer is provided by the starting hourly earnings on the vocational graduate's first full-time job without qualification as to trade studied, geographical region and other factors.

In Chapter 3, initial earnings were shown to be related to present earnings, i.e. those who started with relatively high hourly earnings also reported relatively high present earnings, two, six and eleven years after graduation. Initial earnings were unrelated to the other occupational measures, including related placement. The lack of relationship with the latter measure indicates those who enter trades unrelated to the trade studied start with about the same earnings as those who enter the trade studied or highly related trades.

The present chapter continues the analysis of the measure in terms of the basic study variables.

Analysis by Year of Graduation

Within each year of graduation group, what is the distribution of initial hourly earnings? What is the mean and median starting hourly wage of vocational graduates for each year of graduation group? Table 143 presents the data.

The earnings distributions are markedly skewed, as one might expect, toward the low end. For the graduates of 1953, 1958 and 1962 the mean hourly rates are 1.38, 1.50 and 1.47 respectively, whereas the median hourly rates are 1.20, 1.40 and 1.30 respectively.

Table 143. INITIAL EARNINGS: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Initial Earnings	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
> 4.00	3	0.3	100.0	1	0.1	100.0	4	0.2	100.0	8	0.2	100.0
3.51-4.00	4	0.4	99.7	6	0.4	99.9	7	0.4	99.8	17	0.4	99.8
3.01-3.50	5	0.5	99.3	12	0.9	99.5	10	0.6	99.4	27	0.7	99.4
2.51-3.00	22	2.1	98.8	49	3.5	98.6	56	3.4	98.8	127	2.0	98.7
2.01-2.50	71	6.9	96.7	132	9.4	95.1	105	6.3	95.4	309	7.6	95.7
1.51-2.00	185	17.9	89.8	316	22.6	85.7	307	18.4	89.1	810	19.6	88.1
1.01-1.50	438	42.3	71.9	589	42.0	63.1	946	56.7	70.7	1980	48.1	68.5
.51-1.00	299	28.9	29.6	290	20.7	21.1	223	13.4	14.0	814	19.8	20.4
.11- .50	7	0.7	0.7	6	0.4	0.4	11	0.6	0.6	24	0.6	0.6
Number	1034			1401			1669			4116		
Mean	1.38			1.50			1.47			1.46		
Median	1.20			1.40			1.30			1.30		
S.D.	.54			.56			.55			.55		

In view of the trend of generally increasing wages since the end of World War II, it is surprising that the expected trend did not materialize. The 1962 graduates had a lower mean and median starting wage than the 1958 graduates, who left school in a recession year and who had much more difficulty finding a first job. A plausible explanation is lacking.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of starting earnings per hour? Table 144 presents the data.

Within each of the year of graduation groups, the mean starting hourly wage of vocational school graduates is slightly higher than that of compre-

Table 144. INITIAL EARNINGS: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Initial Earnings		
		N	M	S.D.
1953	Vocational	635	1.38	0.52
	Comprehensive	402	1.36	0.59
1958	Vocational	812	1.54	0.58
	Comprehensive	593	1.44	0.54
1962	Vocational	994	1.48	0.55
	Comprehensive	679	1.44	0.57
Combined	Vocational	2451	1.48	0.55
	Comprehensive	1676	1.42	0.57

hensive school graduates. While the differences are not significant, their consistency in favor of vocational school graduates suggests the latter start at slightly higher wages as a group. A plausible explanation is lacking.

Analysis by School Enrollment

Do the vocational graduates of small, medium and large enrollment schools, as defined by this study, differ significantly in starting hourly wages on their first full-time job? Table 145 provides the data.

The data indicate there is no relationship between school enrollment and first job starting hourly wages. Differences between mean values within each year of graduation group are not significant.

Table 145. INITIAL EARNINGS: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Initial Earnings		
		N	M	S.D.
1953	< 500	370	1.37	0.53
	500 - 1500	387	1.38	0.55
	> 1500	280	1.36	0.55
1958	< 500	459	1.54	0.54
	500 - 1500	558	1.48	0.61
	> 1500	388	1.47	0.52
1962	< 500	557	1.41	0.44
	500 - 1500	614	1.50	0.64
	> 1500	502	1.49	0.58
Combined	< 500	1388	1.44	0.50
	500 - 1500	1568	1.46	0.61
	> 1500	1171	1.45	0.55

Analysis by Race of Graduate

How do white and Negro vocational graduates compare in terms of first job starting hourly wages? Table 146 provides the data.

For the three year of graduation groups, there is no consistent difference favoring either white or Negro graduates. None of the differences are statistically significant. The conclusion is that race of graduates is not a variable which influences first job hourly wage rates.

Analysis by Type of Graduate

How do vocational and academic graduates compare in terms of first job starting hourly wages? Table 147 provides the data.

Table 146. INITIAL EARNINGS: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Initial Earnings		
		N	M	S.D.
1953	White	988	1.36	0.54
	Negro	37	1.53	0.60
	Other	3	2.03	0.45
1958	White	1282	1.51	0.54
	Negro	89	1.36	0.78
	Other	4	1.15	0.87
1962	White	1507	1.47	0.52
	Negro	123	1.41	0.93
	Other	4	1.35	0.18
Combined	White	3788	1.46	0.54
	Negro	250	1.41	0.84
	Other	11	1.46	0.45

Table 147. INITIAL EARNINGS: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Initial Earnings		
		N	M	S.D.
1953	Vocational	1037	1.37	0.55
	Academic	358	1.72	0.75
1958	Vocational	1405	1.50	0.56
	Academic	393	1.69	0.70
1962	Vocational	1673	1.43	0.56
	Academic	282	1.49	0.50
Combined	Vocational	4127	1.45	0.56
	Academic	1033	1.63	0.68

The 1953, 1958 and 1962 academic graduates earned respectively 35, 19, and 6 cents per hour more as the initial job starting wage than did the vocational graduates. For all years, the mean hourly starting wage of academic graduates is 18 cents per hour greater than that of vocational graduates. The difference is to be expected because a greater proportion of academic graduates have completed some, if not four years of college, than vocational graduates before obtaining their first full-time job.

Table 148 presents a more equitable comparison of the two types of graduates. It includes only vocational and academic graduates who have had no college education.

Table 148. INITIAL EARNINGS: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES WITH NO COLLEGE EDUCATION

Year of Graduation	Type of Graduate	Initial Earnings		
		N	M	S.D.
1953	Vocational	826	1.31	0.49
	Academic	150	1.44	0.61
1958	Vocational	1182	1.46	0.52
	Academic	215	1.48	0.55
1962	Vocational	1504	1.46	0.56
	Academic	208	1.44	0.49
Combined	Vocational	3524	1.43	0.53
	Academic	573	1.46	0.54

The initial earnings of the 1953 academic graduates were thirteen cents an hour greater than that of 1953 vocational graduates. By 1958, the greater initial earnings of the academic graduates was only two cents an hour. And by 1962 the difference was reversed. The 1962 vocational graduates had slightly higher initial earnings. The differences, however, for 1958 and 1962 graduates are not significant.

Two interpretations can be given: (1) The differences in initial earnings lack statistical significance; therefore, there is no difference in initial earnings between vocational and academic graduates. (2) The initial earnings of vocational graduates have in the past been lower than those of academic graduates, but have now caught up with and surpassed the initial earnings of academic graduates. The lack of significant differences does nothing to help the latter interpretation. More data is needed from more recent graduating classes to confirm or reject the hypothesis implied by the second interpretation.

ANALYSIS OF PRESENT EARNINGS

Introduction

Present earnings have reference to the reported hourly wage or salary rate being earned by the graduates as of June 30, 1964. The job worked at the time may have been in the trade studied in high school, a highly related trade, a slightly related trade, or a completely unrelated trade.

In Chapter 3, the reliability and stability of the measure were established. It was also shown that present earnings were significantly correlated with such other occupational measures as related placement, i.e. the more related the initial job to the trade studied, the higher earnings two, six and eleven years after graduation; with job relatedness, i.e. the more all jobs held were related to the trade studied, the higher earnings two, six and eleven years after graduation; with employment security, i.e. the less unemployment experienced, the greater present hourly earnings; with initial earnings, i.e. the greater first job starting hourly earnings, the greater present earnings; and with job satisfaction, i.e. the greater present earnings, the greater the satisfaction reported for all jobs held.

This section continues the analysis of the measure in terms of the basic study variables.

Analysis by Year of Graduation

Within each year of graduation group, what is the distribution of present (June, 1964) hourly earnings? What is the mean and median present hourly earnings for 1953, 1958 and 1962 graduates? Table 149 provides the data.

For the graduates of 1953, 1958 and 1962 the mean present hourly rates are 3.08, 2.49 and 2.01 dollars respectively, and the median rates are 3.00, 2.30 and 1.90 respectively. The average production employee hourly wage for 1964 was 2.53 dollars per hour.[1]

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[1] Bureau of Labor Statistics, 1965, Employment and Earnings

The average earnings of those who were working in the trade studied at the time of the survey are significantly higher than the above averages. This can be inferred from the correlation between job relatedness and present earnings mentioned earlier.

The differences between the hourly earnings of graduates two years out of school and those six and eleven years out of school are respectively .48 and 1.07 dollars. Assuming a forty hour week, the mean 1962, 1958 and 1953 graduate earns about 80, 100 and 120 dollars per week respectively. On an annual basis, those earnings are 4160, 5200 and 6240 dollars respectively. How this compares with the earnings of academic course graduates will be discussed in a later section.

Table 149. PRESENT EARNINGS: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Present Earnings	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
> 5.00	34	3.3	100.0	11	0.8	100.0	7	0.4	100.0	52	1.2	100.0
4.51-5.00	46	4.4	96.7	16	1.1	99.2	7	0.4	99.6	69	1.7	98.8
5.01-4.50	67	6.5	92.3	31	2.2	98.1	4	0.2	99.2	102	2.5	97.1
3.51-4.00	124	12.0	85.8	71	5.0	95.9	16	1.0	99.0	211	5.0	94.6
3.01-3.50	201	19.4	73.8	155	10.9	90.9	61	3.6	98.0	419	10.1	89.6
2.51-3.00	264	25.4	54.4	320	22.5	80.0	201	11.8	94.4	788	18.9	79.5
2.01-2.50	184	17.7	29.0	394	27.7	57.5	404	23.8	82.6	984	23.6	60.6
1.51-2.00	74	7.1	11.3	280	19.7	29.8	553	32.6	58.8	909	21.8	37.0
1.01-1.50	34	3.3	4.2	126	8.8	1	395	23.3	26.2	557	13.4	15.2
.51-1.00	9	0.9	0.9	17	1.2	1.3	44	2.6	2.9	71	1.7	1.8
.11- .50	0	0.0	0.0	1	0.1	0.1	5	0.3	0.3	6	0.1	0.1
Number	1037			1422			1697			4168		
Mean	3.08			2.49			2.01			2.44		
Median	3.(			2.30			1.90			2.30		
S.D.	1.00			.81			.69			.92		

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of present earnings after so many years out of school? Table 150 provides the data.

Table 150. PRESENT EARNINGS: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Present Earnings		
		N	M	S.D.
1953	Vocational	656	2.97	1.10
	Comprehensive	411	3.03	1.11
1958	Vocational	846	2.45	0.94
	Comprehensive	631	2.33	0.90
1962	Vocational	1044	1.97	0.74
	Comprehensive	716	1.88	0.82
Combined	Vocational	2557	2.39	1.00
	Comprehensive	1761	2.31	1.02

Within each year of graduation group, there is no substantial difference in present hourly earnings between graduates of the two types of schools. The conclusion is that the type of school attended is unrelated to hourly earnings two, six and eleven years after graduation, notwithstanding the slight difference in favor of vocational school graduates.

Analysis by School Enrollment

Do vocational graduates of small, medium and large enrollment schools, as defined by this study, differ significantly in present hourly earnings two, six and eleven years out of school? Table 151 provides the data.

Table 151. PRESENT EARNINGS: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Present Earnings		
		N	M	S.D.
1953	< 500	382	2.88	1.05
	500 - 1500	404	2.96	1.12
	> 1500	281	3.21	1.12
1958	< 500	486	2.33	0.92
	500 - 1500	585	2.41	0.93
	> 1500	406	2.47	0.90
1962	< 500	588	1.83	0.63
	500 - 1500	643	1.95	0.82
	> 1500	529	2.04	0.85
Combined	< 500	1459	2.27	0.96
	500 - 1500	1642	2.36	1.02
	> 1500	1217	2.45	1.04

In all year of graduation groups, the mean present hourly earnings increases with greater enrollment. For all graduates combined, the present hourly earnings are 2.27, 2.36 and 2.45 for small, medium and large enrollment schools respectively.

What is the explanation? One possible explanation is that the larger enrollment schools are located in or closer to areas of greater industrial diversity, growth and labor organization. Such factors would tend to increase hourly earnings. Another possible explanation lies in the fact that the larger enrollment schools offer more vocational courses, many of which are in trades that have higher hourly earnings after some experience is gained, e.g. industrial electrician, machinest, and plumber. It is unlikely that the trend is related to differences in school characteristics directly.

Analysis by Race of Graduate

How do white and Negro vocational graduates compare in terms of hourly earnings two, six and eleven years out of school? Table 152 provides the data.

Table 152. PRESENT EARNINGS: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Present Earnings N	M	S.D.
1953	White	1017	3.01	1.11
	Negro	38	2.58	1.06
	Other	3	4.17	0.83
1958	White	1347	2.44	0.90
	Negro	96	1.87	1.06
	Other	4	2.42	0.51
1962	White	1582	1.96	0.74
	Negro	130	1.69	1.10
	Other	6	1.38	0.71
Combined	White	3959	2.39	0.99
	Negro	265	1.89	1.12
	Other	13	2.35	1.29

Within each year of graduation group, the Negro graduates had lower hourly earnings than the white graduates. Furthermore, the difference is greater after five and eleven years out of school than after two years. White 1953 graduates have a present hourly rate (June, 1964) of 3.01 compared to the rate of 2.58 for 1953 Negro graduates. The difference is substantial.

One explanation for differences in hourly earnings between white and Negro graduates is the finding that a much smaller percentage of the Negro graduates find work in the trade for which trained or in highly related trades. It has been shown that job relatedness to trade studied in high school correlates with present earnings. The disadvantage of the Negro is again demonstrated. Because he does not get into the trade for which trained, he also earns less two, six and ten years after graduation. No doubt there are still other reasons why Negro graduates earn less than white graduates after so many years out of school.

Analysis by Type of Graduate

How do vocational and academic graduates compare in terms of present hourly earnings two, six and eleven years after graduation. Table 153 provides the data for the two types of graduates without regard to post-high school education.

Table 153. PRESENT EARNINGS: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Present Earnings		
		N	M	S.D.
1953	Vocational	1067	3.00	1.10
	Academic	379	3.22	1.45
1958	Vocational	1477	2.40	0.92
	Academic	426	2.40	1.01
1962	Vocational	1760	1.94	0.78
	Academic	306	1.73	0.77
Combined	Vocational	4318	2.36	1.01
	Academic	1111	2.50	1.27

The academic graduates of 1953 were earning substantially more than the vocational graduates of 1953. The academic and vocational graduates of 1958 had the same rate of hourly earnings. However, the vocational graduates of 1962 were earning substantially more than the academic graduates of 1962. What is the explanation? The greater college education among the academics accounts for the data. The superiority of the 1953 academic graduates is attributable to the greater percentage of college graduates among them than among 1953 vocational graduates. However, the 1962 academic graduates do not include those who were attending college full-time, and had never yet held a job. That explains why 1962 vocational graduates were earning more than the 1962 academic graduates. The latter were mainly those with no college attendance or those who had dropped out of college to go to work.

Table 154 compares vocational graduates with academic graduates, neither of which have attended college.

Table 154. PRESENT EARNINGS: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (Based on graduates with no college education who have ⋝ 6 months employable time)

Year of Graduation	Type of Graduate	Present Earnings		
		N	M	S.D.
1953	Vocational	822	3.02	0.95
	Academic	152	3.06	1.22
1958	Vocational	1198	2.46	0.79
	Academic	221	2.35	0.88
1962	Vocational	1536	2.01	0.70
	Academic	208	1.87	0.62
Combined	Vocational	3568	2.40	0.89
	Academic	581	2.36	1.02

The 1962 vocational graduates were earning fourteen cents an hour more than the 1962 academic graduates two years after graduation. The 1958 vocational graduates were earning eleven cents an hour more than the 1958 academic graduates six years after graduation. However, eleven years after graduation, the 1953 vocational graduates were earning four cents an hour less than the 1953 academic graduates. For all graduates combined, the non-college vocationals earned $2.40 an hour, whereas the non-college academics earned $2.36 as of June, 1964.

The data suggests this generalization: For the first six or more years after graduation, the non-college vocationals earn more than their academic counterparts. Somewhere between six and eleven years after graduation, the earnings of the non-college academic graduates catch up with the earnings of the vocational graduates. It may even be that thereafter the earnings of the academics exceed that of the vocational graduates. The data is not sufficient to be conclusive on the latter possibility.

A further study of the earning potential of vocational and academic graduates needs to be done to determine comparative earnings over a greater period of time. Within the time period studied, the vocational graduates with no college education have substantially greater accumulated earnings than the academic graduates with a college education.

ANALYSIS OF EARNINGS PROGRESSION

Introduction

How have the earnings of the vocational graduates of 1953, 1958 and 1962 progressed since their first full-time job after graduation? The measure that was finally adopted to tell the story of earnings progression was the average increase in earnings per month per month of employment. The measure consists of the difference between present hourly earnings and starting hourly earnings on first full-time job after graduation, multiplied by a constant to put the difference on a per month basis, and divided by the number of months employed. For example, if a graduate started at $300 a month on his first job, and increased his earnings to $400 a month over a ten month period, his earnings progression or average increase per month would be ten dollars. The measure does not take into account the number, amount or spacing of individual raises in the total employment period. Such factors would have a bearing upon total accumulated earnings over the period. The measure, therefore, must not be confused with the idea of accumulated earnings. The equation for the measure is given in Chapter 3.

Earnings progression, as defined above, was shown in Chapter 3 to be related to only one of the occupational measures, present earnings. Graduates with relatively high present earnings (as of June, 1964) tend to have relatively high earnings progression. Since present earnings are an element in the calculation of the measure, the relationship is understandable, although not a necessary one.

Earnings progression was found to be unrelated to employment security, employment stability, job satisfaction, related placement and job relatedness. The lack of relation with job relatedness is particularly noteworthy. The earnings progression of those who go into the trades studied or highly related trades is no different from those who enter only slightly related trades or even completely unrelated trades.

The present section continues the analysis of the measure in terms of the basic study variables.

Analysis by Year of Graduation

Within each year of graduation group, what is the distribution of the average increase in earnings per month per month of employment? What is the mean and median average increase in earnings per month? Table 155 provides the data.

Table 155. EARNINGS PROGRESSION: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL COURSE GRADUATES BY YEAR OF GRADUATION

Earnings Progression	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
>9.01	8	0.9	100.0	61	5.0	100.0	176	12.6	100.0	235	6.9	100.0
8.01-9.00	13	1.4	99.1	38	3.1	95.0	65	4.6	87.4	116	3.3	93.1
7.01-8.00	19	2.1	97.7	44	3.6	91.9	73	5.2	82.8	136	3.8	89.8
6.01-7.00	35	3.8	95.6	70	5.8	88.3	94	6.7	77.6	201	5.7	86.0
5.01-6.00	41	4.4	91.8	115	9.4	82.5	151	10.8	70.9	307	8.7	80.3
4.01-5.00	115	12.5	87.4	148	12.1	73.1	132	9.4	60.1	395	11.1	71.6
3.01-4.00	214	23.4	74.9	209	17.2	61.0	171	12.2	50.7	595	16.8	60.5
2.01-3.00	233	25.4	51.5	211	17.3	43.8	178	12.7	38.5	624	17.6	43.7
1.01-2.00	162	17.7	26.1	153	12.6	26.5	87	6.2	25.8	405	11.4	26.1
.01-1.00	54	5.9	8.4	73	5.9	13.9	44	3.2	19.6	172	4.8	14.7
0.0	23	2.5	2.5	97	8.0	8.0	230	16.4	16.4	352	9.9	9.9
Number	916			1219			1401			3548		
Mean	3.22			3.83			4.55			3.95		
Median	3.00			3.40			4.00			3.40		
S.D.	1.86			2.75			3.57			2.97		

The mean average increase in earnings per month of employment is 4.55, 3.83 and 3.22 dollars respectively for the graduates of 1962, 1958 and 1953.

The equivalent median values are 4.00, 3.40 and 3.00 dollars per month. The decrease in earnings progression with increased months of employment, from a maximum of 24 for 1962 graduates to a maximum of 132 for 1953 graduates, is to be expected. Earnings tend to increase at a negatively accelerated rate over such a long period of time, with the sharpest rate of increase coming in the first few years. For that reason, the 1962 graduates, with only twenty-four months out of school, show the highest earnings progression.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of mean average earnings increase per month of employment? Table 156 provides the data.

Table 156. EARNINGS PROGRESSION: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL GRADUATES

Year of Graduation	Type of School	Earnings Progression		
		N	M	S.D.
1953	Vocational	548	3.16	1.82
	Comprehensive	368	3.32	1.92
1958	Vocational	702	3.96	2.77
	Comprehensive	517	3.66	2.72
1962	Vocational	837	4.57	3.54
	Comprehensive	563	4.53	3.61
Combined	Vocational	2097	3.98	2.96
	Comprehensive	1450	3.91	2.98

The differences in average dollars of increased earnings per month of employment between the graduates of the two types of schools are not significant. The conclusion is that the type of school, i.e. comprehensive or vocational, attended by the vocational course student has no bearing on his future earnings progression.

Analysis by School Enrollment

How do graduates of small, medium and large enrollment schools, as defined in this study, compare in terms of average earnings increase per month of employment? Table 157 provides the data.

Table 157. EARNINGS PROGRESSION: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL GRADUATES

Year of Graduation	School Enrollment	Earnings Progression		
		N	M	S.D.
1953	< 500	312	3.01	1.73
	500 - 1500	351	3.14	1.86
	> 1500	253	3.60	1.96
1958	< 500	377	3.82	2.82
	500 - 1500	493	3.79	2.71
	> 1500	349	3.90	2.74
1962	< 500	478	4.20	3.43
	500 - 1500	497	4.48	3.67
	> 1500	425	5.04	3.55
Combined	< 500	1169	3.76	2.91
	500 - 1500	1350	3.87	2.97
	> 1500	1028	4.29	3.02

Within each year of graduation group, the graduates of the > 1500 enrollment schools showed the greatest mean earnings progression. A plausible explanation for the relationship between school enrollment and earnings progression after graduation is that the large enrollment schools are located in or near major metropolitan areas where earnings tend to be higher. It is not likely the school enrollment is related to earnings progression because of an unknown school characteristic which developed the earnings potential of large enrollment school graduates more than those from medium and small enrollment schools.

Analysis by Race of Graduate

How do white and Negro vocational graduates compare in terms of earnings progression? Table 158 provides the data.

Table 158. EARNINGS PROGRESSION: COMPARISON OF GRADUATES BY RACE

Year of Graduation	Race of Graduate	Earnings Progression		
		N	M	S.D.
1953	White	873	3.23	1.83
	Negro	32	2.98	2.35
	Other	3	4.30	1.42
1958	White	1117	3.89	2.75
	Negro	75	2.92	2.50
	Other	4	5.92	3.73
1962	White	1271	4.65	3.59
	Negro	92	3.54	3.24
	Other	4	1.85	1.69
Combined	White	3272	4.00	2.97
	Negro	200	3.23	2.86
	Other	11	4.00	3.11

Within each of the three year of graduation groups, the mean earnings progression score for white graduates was substantially greater than for Negro graduates. The conclusion is that white vocational graduates increase their earnings at a more rapid rate than Negro vocational graduates. The difference in earnings progression between white and Negro graduates cannot be attributable to the fact that a much smaller percentage of Negroes enter the trades for which trained. Earnings progression is unrelated to the job relatedness, i.e. there is no difference in rate of earnings progression between those who enter the trades studied in high school and those who enter completely unrelated trades.

Analysis by Type of Graduate

How do vocational and academic course graduates with no college education compare in terms of earnings progression? Table 159 presents the data.

Table 159. EARNINGS PROGRESSION: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES (Based on graduates with no college education who have ≧ 6 months employable time.)

Year of Graduation	Type of Graduate	Earnings Progression		
		N	M	S.D.
1953	Vocational	726	2.99	1.63
	Academic	132	3.27	2.41
1958	Vocational	1027	3.78	2.71
	Academic	176	3.93	2.85
1962	Vocational	1272	4.59	3.57
	Academic	173	4.11	3.74
Combined	Vocational	3037	3.92	2.98
	Academic	481	3.81	3.12

Two years after graduation, vocational graduates have a slightly greater mean earnings progression score than academic graduates. The difference is reversed six years after graduation, and becomes still greater in favor of academic course graduates eleven years after graduation. The data suggest that vocational graduates have an initial advantage in terms of earnings progression, but that within six years after graduation the advantage swings in favor of the academic graduates, and tends to become even greater in the following years. This is consistent with the interpretation offered in the preceding section on present earnings differences between the two types of graduates. By 1964, the 1962 vocational graduates were earning substantially more than the 1962 academic graduates. However, in the same year, 1953 academic graduates were earning slightly more than their vocational counterparts. Thus, over a period of about ten years, the academic graduates seem to overcome their earnings disadvantage of the early years at work.

10

THEIR POST HIGH SCHOOL EDUCATIONAL HISTORY

☐ Type of Post-High School Education 1

☐ Accumulated College Education 9

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CHAPTER 10 SUMMARY

Type of Post-High School Education

1. Year of graduation. The data do not permit a trend interpretation of the percentage of 1953, 1958, and 1962 graduates who reported post-high school education. About 41 per cent of the vocational graduates claimed some type of formal post-high school education. They attended virtually every type of post-high school source of education. The six most frequently mentioned sources are military-specialist school, four-year college, correspondence courses, two-year colleges, public trade-technical schools, and private trade-technical schools.

2. Type of school. There are no substantial differences between the graduates of vocational and comprehensive schools in terms of percentages who reported attending the different types of post-high school education.

3. School enrollment. There are no significant differences between small, medium, and large enrollment school graduates in percentages who report attending the different sources of post-high school education, with one exception: substantially fewer graduates from small enrollment schools report having attended college.

4. Race of graduates. A larger percentage of Negro vocational graduates report college-level education than white vocational graduates. The reverse is the case for post-high school trade-related education.

5. Academic versus vocational graduates. As expected, a much greater percentage of academic graduates report college-level education than vocational graduates. The reverse is the case for post-high school trade-related education.

Accumulated College Education

6. Year of graduation. The mean total class hours of college education accumulated by the graduates of 1953, 1958, and 1962 indicates that college credits are being carried up to 11 years after graduation. Also, the majority of the vocational graduates who attend college do not complete a four-year program.

7. Type of school. The difference in mean accumulated class hours of college education between vocational graduates of vocational and comprehensive schools is not significant.

8. School enrollment. The enrollment of former schools is unrelated to the mean class hours of college education accumulated by vocational graduates.

(Continued in Appendix B)

TYPE OF POST-HIGH SCHOOL EDUCATION

Introduction

Vocational education has been criticized for being terminal education, that is, for not preparing its graduates for higher education in the event that they so choose. Whether the criticism has merit or not, is not here the issue. It does imply that vocational graduates pursue little in the way of further formal education after graduation. That raises some researchable questions. What types of post-high school education do the graduates pursue? To what extent do they continue education after high school?

Analysis by Year of Graduation

Do the graduates of 1953, 1958 and 1962 differ in percentages that claim different kinds of post-high school education? Are there any discernable trends in terms of participation in the different kinds of education after high school? Table 160 presents the data.

Table 160. KINDS OF POST-HIGH SCHOOL EDUCATION REPORTED BY VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Sources of Post-High School Education	YEAR OF GRADUATION							
	1953		1958		1962		Combined	
	N	%	N	%	N	%	N	%
Two-year college	117	10.1	145	8.7	211	8.5	474	8.9
Four-year college	186	16.0	199	12.0	214	8.6	600	11.3
Post-college graduate school	41	3.5	22	1.3	—	—	63	1.2
Private trade/technical school	96	8.3	84	5.1	94	3.8	276	5.2
Public trade/technical school	92	7.9	123	7.4	163	6.6	380	7.1
Business-commercial school	44	3.8	40	2.4	40	1.6	124	2.3
Adult continuation school	76	6.5	97	5.8	78	3.1	252	4.7
Military specialist school	358	30.8	421	25.4	376	15.1	1157	21.7
Company course or school	185	15.9	157	9.5	93	3.7	436	8.2
Correspondence courses	171	14.7	185	11.2	156	6.3	512	9.6
Other than above	133	11.4	140	8.4	127	5.1	402	7.5

For the combined graduates, the six most frequently mentioned sources of post-high school education were as follows:

1.	Military specialist schools	(21.7 percent)
2.	Four year college	(11.3 percent)
3.	Correspondence courses	(9.6 percent)
4.	Two year colleges	(8.9 percent)
5.	Public trade-technical schools	(7.1 percent)
6.	Private trade-technical schools	(5.2 percent)

The percentages shown in Table 160 are not mutually exclusive, and can't be summed for a total percentage of graduates who reported some type of formal post-high school education. A separate analysis revealed that 41.6 percent of all vocational graduates claimed some type of formal post-high school education other than military specialist school. How much of such education was started and not completed is a question for which the study has no data. It can be concluded, however, that vocational education is not terminal education for a large percentage of graduates. The latter attend, in varying percentages, virtually every type of post-high school education.

What about trends? Are recent graduates obtaining additional education in greater numbers? Since the period of opportunity for post-high school education is greatest for the 1953 graduates and least for the 1962 graduates, the percentages by year of graduation are not truly comparable. What appears to be a trend of decreasing percentages attending the various sources of post-high school education is probably a reflection of the differences in time opportunity for additional education. With a few more years out of school, the graduates of 1962 can be expected to report more additional education than shown in Table 160. No conclusion can be drawn from Table 160, therefore, on the question of whether recent graduates are attending sources of post-high school education in greater proportions than those of five to ten years ago.

The percentage of 1953, 1958 and 1962 graduates who reported that they went directly to full-time college studies from high school is 8.3, 8.8 and 10.4 percent respectively. While these data suggest a slight trend, they are not conclusive.

Similarly, the percentage of 1953, 1958 and 1962 graduates who reported they went directly to full-time non-college studies is 0.7, 1.4 and 1.5 per cent respectively. The data hardly warrant the conclusion that there is a trend of increasing full-time non-college studies by vocational graduates. (Most vocational graduates continue their non-college studies on a part-time basis.)

Thus, what data the study has available, suggests there is no significant change over the past ten years in the percentage of graduates who pursue either college or non-college education. The data, however, are not considered adequate to be conclusive.

Analysis by Type of School

How do the vocational graduates of comprehensive and vocational schools compare in terms of percentages that report attending the different sources of post-high school education? Which of the two types of schools sends a greater percentage of graduates into post-high school education? Table 161 provides the data.

Table 161. KINDS OF POST-HIGH SCHOOL EDUCATION REPORTED BY VOCATIONAL GRADUATES BY TYPE OF HIGH SCHOOL ATTENDED

Sources of Post-High School Education	TYPE OF SCHOOL			
	Vocational		Comprehensive	
	N	%	N	%
Two-year college	236	7.6	238	10.8
Four-year college	348	11.2	252	11.4
Post-college graduate school	44	1.4	25	1.1
Private trade/technical school	149	4.8	127	5.8
Public trade/technical school	242	7.8	138	6.3
Business-commercial school	66	2.1	58	2.6
Adult continuation school	143	4.6	109	4.9
Military specialist school	672	21.5	485	22.0
Company course or school	256	8.2	180	8.2
Correspondence courses	277	8.9	235	10.7
Other than above	270	8.7	132	6.0

A slightly higher percentage of comprehensive high school graduates report attendance at two year colleges. Beyond that, the differences are negligible The conclusion is that the two types of schools send about an equal percentage of vocational graduates to each of the different sources of post-high school education. The proximity of such educational sources is undoubtedly a factor when schools are compared on an individual basis. It is not a factor in the present comparison.

Analysis by School Enrollment

How do small, medium and large enrollment high schools, as defined in this study, compare in terms of percentage of graduates who report attending the different sources of post-high school education? Table 162 presents the data.

Table 162. KINDS OF POST-HIGH SCHOOL EDUCATION REPORTED BY ENROLLMENT OF HIGH SCHOOL ATTENDED

Sources of Post-High School Education	SCHOOL ENROLLMENT					
	< 500		500 - 1500		> 1500	
	N	%	N	%	N	%
Two-year college	87	5.0	224	11.1	163	10.5
Four-year college	125	7.1	291	14.4	184	11.8
Post-college graduate school	15	0.8	34	1.7	20	1.3
Private trade/technical school	90	5.1	87	4.3	99	6.4
Public trade/technical school	135	7.7	117	5.8	128	8.2
Business-commercial school	36	2.0	50	2.5	38	2.4
Adult continuation school	85	4.8	77	3.8	90	5.8
Military specialist school	399	22.7	412	20.4	346	22.2
Company course or school	132	7.5	174	8.6	130	8.4
Correspondence courses	171	9.7	181	9.0	160	10.3
Other than above	149	8.5	153	7.6	100	6.4

For all enrollment categories, the percentages vary within a range of two percentage points for private trade-technical schools, public trade-technical schools, business schools, adult continuation school, military specialist school, company courses, and correspondence courses. The conclusion is that the enrollment of the high school attended has little or no bearing on the percentage of graduates attending such sources of post-high school education.

The percentage of vocational graduates from small enrollment schools, i.e. less than 500 enrollment, who reported attending two-year colleges and four-year colleges is less than half the percentage from medium and large enrollment schools. Why this is so is a matter for hypothesis and further research. Possibly, the small schools do less in the way of making it possible for graduates to enter college. It also may be because they are less likely to be in or near centers of higher education.

Analysis by Race of Graduate

How do Negro and white graduates compare in terms of percentage reporting attendance at the different sources of post-high school education? Table 163 presents the data.

A larger percentage of Negro graduates report attending two-year colleges (12.5 percent vs. 8.7 percent for white graduates) and four-year colleges (15.1 percent vs. 11.0 percent for white graduates).

A larger percentage of white graduates report taking company courses (8.8 percent vs. 2.0 percent for Negro graduates); correspondence courses (10.1 percent vs. 4.1 percent); and adult continuation courses (5 percent vs. 2.3 percent).

A comment-worthy difference is the percentage of Negroes and whites reporting attendance at military specialist schools. Almost 23 percent of white graduates report such experience, whereas only 12 percent of the Negroes report attending such schools. The percentage of white graduates who reported military service was 51 percent. Forty-two percent of Negro graduates reported such experience. It is apparent the Negro graduates are not attending military specialists schools in the same proportion as white graduates. Unfortunately, the study has no data

Table 163. KINDS OF POST-HIGH SCHOOL EDUCATION REPORTED BY RACE OF VOCATIONAL GRADUATES

Sources of Post-High School Education	RACE OF GRADUATE					
	White		Negro		Other	
	N	%	N	%	N	%
Two-year college	421	8.7	43	12.5	2	10.5
Four-year college	531	11.0	52	15.1	4	44.4
Post-college graduate school	59	1.2	6	1.7	3	15.8
Private trade/technical school	251	5.2	18	5.2	2	10.5
Public trade/technical school	353	7.3	18	5.2	3	15.8
Business-commercial school	16	0.3	6	1.7	2	10.5
Adult continuation school	240	5.0	8	2.3	2	10.5
Military specialist school	1098	22.7	42	12.2	3	15.8
Company course or school	425	8.8	7	2.0	0	0.0
Correspondence courses	491	10.1	14	4.1	0	0.0
Other than above	381	7.9	17	4.9	1	5.3

on the reasons for the comparatively small Negro attendance at military specialists schools. Conceivably, such reasons might shed light on the relative educational achievement status of white and Negro vocational school graduates.

Analysis by Type of Graduate

How do academic and vocational graduates compare in terms of having attended the different types of post-high school education? Table 164 presents the data.

As expected, a proportionately greater number of academic graduates report having attended two year colleges (15.8 percent vs. 8.9 percent for the vocational graduates); four year colleges (47.2 percent vs. 11.3 percent); and graduate schools (8.4 percent vs. 1.3 percent).

Conversely, a greater percentage of vocational graduates report having attended private trade schools (5.2 percent vs. 4.2 percent for academic graduates); public trade schools (7.1 percent vs. 3.8 percent); company courses (8.2 percent vs. 6.1 percent); adult continuation schools (4.7 percent vs. 2.1 percent); and correspondence courses (9.6 percent vs. 7.7 percent). The differences are not great. They do, however, confirm that the vocational graduate has a much greater interest in a trade or trade-related education.

Table 164. KINDS OF POST-HIGH SCHOOL EDUCATION REPORTED BY VOCATIONAL GRADUATES BY TYPE OF GRADUATE

Sources of Post-High School Education	TYPE OF GRADUATE			
	Vocational		Academic	
	N	%	N	%
Two-year college	474	8.9	282	15.8
Four-year college	600	11.3	841	47.2
Post-college graduate school	69	1.3	150	8.4
Private trade/technical school	276	5.2	75	4.2
Public trade/technical school	380	7.1	68	3.8
Business-commercial school	124	2.3	69	3.9
Adult continuation school	252	4.7	37	2.1
Military specialist school	1152	21.7	385	21.6
Company course or school	436	8.2	109	6.1
Correspondence courses	512	9.6	137	7.7
Other than above	402	7.5	103	5.8

There is a further aspect of the data that warrants comment. Of the total academic graduates, 44 percent reported that they never attended college. Another 22 percent attended college for various periods but did not complete their college education. Thus, 66 percent of the academic graduates had no college education or an incomplete college education. In view of this, the percentage of academic graduates who report attending non-college sources of post-high school education is amazingly small. Academic graduates who do not go to college actually accumulate less non-college post-high school education than vocational graduates who do not go to college. Sixty-four percent of academic graduates reported they had not attended any of the non-college sources of post-high school education.

ACCUMULATED COLLEGE EDUCATION

Introduction

About 18 percent of vocational course graduates reported that they had some college education. The percentage who claim some college education is only part of the story. One would also like to know how much college education was accumulated by those that did go to college.

Chapter 3 introduced a college education index that described the total accumulated hours of college-level education. The index score was derived as follows: Graduates reported the average hours of class attendance per week in two year colleges, four year colleges and graduate schools. They also indicated the dates of attendance. From this data, it is possible to calculate an approximation of the total class hours accumulated in all three college-level institutions. That total is the college education index. It equates amount of college education to hours of classroom attendance.

The procedure had one flaw. There was evidence that some students reported average hours of classroom attendance and study hours instead of merely class hours as requested. This was the only interpretation that could be placed upon some of the high hours of weekly attendance reported. The percentage who misinterpreted the questionnaire in this way, in so far as it was possible to determine, was less than ten percent. All who reported more than twenty class hours per week were equated to twenty class hours. This, of course, is only a partial correction because there was no way of ascertaining whether those who reported less than twenty class hours per week were also including non-class study hours. The only reasonable assumption is that the college education index scores are, by this error, higher than what they would be if the graduates reported only average weekly hours of class attendance.

The error does not invalidate the comparative analysis made in this section. There is no reason to believe that those who misinterpreted the question were distributed in anything but a random manner among the categories under comparison. The error does, however, suggest caution in interpreting the index values and the mean accumulated hours of education by type of institution as absolute values. They are undoubtedly inflated.

The calculated college education index scores may be interpreted as staying power of the graduates. The lower the score, the fewer the total college hours accumulated, the sooner the graduate dropped out of college. It should be understood, however, that the study has no data to explain differences in staying power.

Analysis by Year of Graduation

What is the college education index, i.e. mean total accumulated classroom hours of college education, for the vocational graduates of 1953, 1958 and 1962? Table 165 provides the data. (The index values multiplied by 10 are the actual mean total accumulated hours.)

Table 165. COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST HIGH SCHOOL EDUCATION BY YEAR OF GRADUATION

Sources of Post-High School College Education	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
Two-year college	106	140.0	109.9	136	151.6	118.7	194	107.5	90.5	437	129.2	106.5
Four-year college	171	284.1	209.3	181	224.4	192.5	198	108.8	73.4	551	201.0	182.0
Post graduate school	33	144.3	228.6	22	63.0	80.9	-	-	-	55	101.2	178.7
College Education Index	243	221.7	161.6	285	175.5	130.3	382	91.9	59.3	911	152.8	129.3

The reader is cautioned against a year to year comparison. The index values of 222, 176 and 92 for the graduates of 1953, 1958 and 1962 respectively are a reflection of the differences in opportunity to accumulate college hours. The class of 1962 graduates who are attending college have necessarily an incomplete number of accumulated college hours. To a lesser degree, that is probably also the case for some 1958 graduates who may have gone to college after a year or more of work or who went part-time.

The total accumulated hours of the 1953 graduates is substantially greater than that of the 1958 graduates. This indicates that vocational graduates continue to accumulate college credits between six and eleven years out of school. The finding is attributable to the greater part-time college attendance by vocational graduates.

The apparent stretchout of college education for vocational graduates may be attributable to two factors. Most vocational graduates do not go directly from high school to college. The occupational history of many indicates that one or more years of gainful employment preceded enrollment in college. Also, a much greater percentage of vocational graduates pursue college studies on a part-time basis.

Analysis by Type of School

How do the vocational graduates of comprehensive and vocational schools compare in terms of total accumulated hours of college education. Table 166 provides the data.

Table 166. COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS BY TYPE OF HIGH SCHOOL ATTENDED

Sources of Post-High School College Education		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
Two-year college		224	128.8	108.4	213	129.6	104.5
Four-year college		319	197.3	176.0	232	206.2	190.0
Post graduate school		39	77.1	142.0	24	140.5	220.4
College Education Index		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	136	206.1	150.4	107	241.5	172.7
	1958	159	182.1	130.3	126	167.3	129.8
	1962	213	90.8	59.1	169	93.3	59.6
	Combined	508	150.2	124.4	403	155.9	134.3

Within each year of graduation group, the difference in the college education index between the graduates of the two types of schools fails to be significant. The same is so for the index difference for the combined graduates. The conclusion is that type of school attended is unrelated to the graduate's college education staying power.

Analysis by School Enrollment

How do the vocational graduates of small, medium and large enrollment schools, as defined in this study, compare in terms of total accumulated hours of college education? Table 167 presents the data.

Table 167. COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS BY RACE OF VOCATIONAL GRADUATE

Sources of Post-High School College Education		SIZE OF SCHOOL ENROLLMENT								
		< 500			500-1500			> 1500		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Two-year college		81	155.2	121.0	209	120.8	101.1	147	126.7	103.2
Four-year college		114	189.5	174.9	264	210.6	185.9	173	194.1	180.0
Post graduate school		12	76.3	78.8	30	138.0	236.7	21	63.0	92.1
College Education Index		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	57	212.6	153.6	118	235.7	170.5	68	205.0	149.5
	1958	70	152.3	110.2	130	188.2	138.2	85	175.3	130.5
	1962	64	83.5	59.8	173	90.7	59.3	145	97.0	58.7
	Combined	191	147.2	123.8	422	161.4	138.8	298	144.0	117.6

The college education index values within each year of graduation group fail to reveal a significant trend between high school enrollment and accumulated hours of college education. There is a suggestion that those from medium enrollment schools (500 to 1500) accumulate more college hours than those from either small or large enrollment schools. However, the lack of significant differences make it inadvisable to come to a firm conclusion on this point.

Analysis by Race of Graduate

How do Negro and white vocational graduates who report having attended college compare in terms of total accumulated class hours of college education? Table 168 provides the data.

Table 168. COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS BY RACE OF VOCATIONAL GRADUATE

Sources of Post-High School College Education		RACE OF GRADUATE								
		White			Negro			Other		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Two-year college		389	129.8	108.8	38	118.8	90.0	2	146.0	106.0
Four-year college		486	197.8	182.7	49	232.7	188.6	4	261.5	171.4
Post graduate school		53	109.5	193.4	6	53.2	21.3	3	60.7	37.6
College Education Index		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	219	214.8	161.0	21	281.4	159.2	1	410.0	0.00
	1958	250	173.0	128.2	26	191.0	151.9	1	414.0	0.00
	1962	337	90.8	59.8	33	90.0	54.0	3	156.3	42.0
	Combined	807	150.0	128.0	80	173.1	146.2	5	258.6	129.4

It should be stated that the number of Negro vocational graduates who reported attending college is so small as to make the comparison of questionable value. Within each year of graduation group, the difference in the college education index between white and Negro graduates favors the latter.
It would seem that Negro vocational graduates who do go to college have somewhat greater staying power than their white counterparts. The finding should be regarded as suggestive rather than conclusive because of the small number of Negro graduates involved in the comparison.

Analysis by Type of Graduate

How do vocational and academic graduates from the same comprehensive schools, who report having attended college, compare in terms of total accumulated hours of college education? Table 169 provides the data.

Table 169. COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS BY TYPE OF HIGH SCHOOL GRADUATE

Sources of Post-High School College Education		TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
Two-year college		213	129.6	104.5	263	136.0	91.2
Four-year college		232	206.2	190.0	801	264.8	205.2
Post graduate school		24	140.5	220.4	134	158.8	195.2
College Education Index		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	107	241.5	172.7	250	330.8	176.5
	1958	126	167.3	129.8	293	280.1	158.2
	1962	169	93.3	59.6	430	119.4	48.5
	Combined	403	155.9	134.3	973	222.1	159.0

Within each year of graduation group, the academic graduates who reported attending college accumulated substantially greater hours of college education than the vocational graduates who came from the same high schools. Whether the differences are attributable to the type of program taken in high school, the type of student who elects each type of program, or a combination of such factors can not be determined from data available. One can merely say that academic graduates have greater college staying power than vocational graduates who came from the same high schools. Further research would be desirable to determine why.

ACCUMULATED NON-COLLEGE EDUCATION

Introduction

Earlier in the chapter, it was reported that 42.6 percent of vocational graduates attended some type of non-college, post-high school education other than military specialist schools. While the percentage is impressive, it does not say anything about how much post-high school, non-college education vocational graduates accumulate. The present section concerns accumulated non-college education in the same manner as the preceding section concerend accumulated college education. The non-colege education index, defined in Chapter 3 as the total accumulated hours of all sources of post-high school, non-college education, is analyzed in terms of the basic study variables.

The error of interpretation reported in the preceding section applies also to this section. Some of the graduates apparently reported both class hours and study hours per week instead of class hours only as was requested. The error was corrected to an indeterminate degree by adopting 40 hours as the maximum acceptable weekly class hours. For those who reported less than 40 hours, there was no way of determining to what extent they included study hours. The error inherent in the data reported in this section does not invalidate the comparative analysis since there is no reason to believe that the error is anything but randomly distributed among the comparative categories. The error does mean that the values reported are undoubtedly spuriously inflated. How much, cannot be specified. However, it is reasonable to assume that the percentage who misinterpreted the questionnaire item was small. Those who reported more than 40 hours per week of such education were less than five percent.

Analysis by Year of Graduation

For the graduates of 1953, 1958 and 1962 who reported attending a post-high school, non-college source of education, what is the non-college education index with and without military specialist school included? Also, what is the mean accumulated class hours reported for each of the different sources of non-college education? Table 170 provides the data. (Multiply presented hours by 10 to obtain actual reported hours.)

Table 170. NON-COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST-HIGH SCHOOL EDUCATION BY YEAR OF GRADUATION FROM HIGH SCHOOL

Courses of Post-High School Non-college Education	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
Private trade/technical school	84	128.3	156.6	79	102.6	149.4	79	79.5	92.2	244	103.4	137.3
Public trade/technical school	81	71.1	89.1	99	62.9	89.0	137	66.6	95.6	319	67.1	92.7
Business-commercial school	31	93.3	95.4	32	74.5	106.5	36	47.2	63.5	99	70.5	91.4
Adult continuation school	52	31.1	35.8	77	32.5	44.2	65	20.5	24.7	195	28.5	37.0
Military specialist school	292	84.2	97.2	376	76.8	82.0	321	68.4	60.1	991	76.1	81.0
Company course or school	135	48.2	52.5	132	49.4	99.9	76	36.1	72.4	344	45.9	78.1
Other than above	92	87.6	134.5	106	89.6	152.3	93	39.2	57.1	292	72.7	125.3
Non-college Education Index	461	105.9	125.7	601	86.1	111.1	622	67.7	80.9	1691	84.7	106.7
Non-college Education Index *	358	94.5	125.7	412	82.9	134.2	408	59.2	86.2	1184	78.4	117.8

* Excluding military school attendance

A comparison is not in order between the three year of graduation groups. The differences in accumulated hours of non-college education between the year of graduation groups must be attributed to the differences in time opportunity to accumulate such education. That there is a substantial difference in the non-college education index values for 1953 and 1958 graduates means simply that this type of education is still accumulated between six and eleven years after graduation. Thus, time opportunity must be comparable before different year of graduation groups can be compared in terms of total amount of non-college education.

An examination of the accumulated hours associated with the different sources of non-college education reveals the following rank order:

1.	Private trade-technical schools	103.4 hours
2.	Military specialist schools	76.1 hours

3.	Business-commercial schools	70.5 hours
4.	Public trade-technical schools	67.1 hours
5.	Company course schools	45.9 hours
6.	Adult continuation schools	28.5 hours

The differences can't be interpreted as differences in staying power. More than likely, they reflect differences in course durations.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools, who reported post-high school, non-college education, compare in terms of the non-college education index and the mean total accumulated hours per source of non-college education. Table 171 provides the data.

Table 171. NON-COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST-HIGH SCHOOL EDUCATION BY TYPE OF HIGH SCHOOL ATTENDED

Sources of Post-High School Non-college Education		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
Private trade/technical school		133	89.3	102.9	111	121.0	168.0
Public trade/technical school		194	54.2	78.1	125	87.2	108.8
Business-commercial school		50	58.1	84.2	49	83.0	96.5
Adult continuation school		109	24.1	29.1	86	34.0	44.5
Military specialist school		573	75.3	75.9	418	77.3	87.4
Company course or school		185	45.6	72.6	159	46.2	84.1
Other than above		195	71.7	126.9	97	74.8	121.8
Non-college Education Index *		681	71.3	106.0	503	88.0	121.0
Non-college Education Index		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	284	101.3	117.4	177	113.2	137.8
	1958	330	78.8	90.4	271	94.9	131.4
	1962	349	58.9	67.6	273	79.1	94.0
	Combined	968	78.3	94.0	723	93.3	121.0

* Excluding military school attendance

The lower section of Table 171 shows the non-college education index values. For each of the graduating classes, comprehensive school graduates have a greater index score than vocational school graduates. The conclusion is that vocational graduates from comprehensive schools accumulate substantially more post-high school education than those from vocational schools. This does not necessarily reflect adversely on the vocational school. It may be that graduates of comprehensive school vocational programs have a stronger need for additional trade training. Chapter 6 indicated that less of these graduates obtain work in the trade studied or highly related trades than do vocational school graduates. It may be that more of the comprehensive school graduates have a preference for other type of work, which causes them to seek more non-college education. The upper section of Table 171 shows the mean accumulated hours for each source of education. Comprehensive school graduates have substantially more accumulated hours in private trade schools, public trade schools, business-commercial schools and adult continuation schools than do vocational school graduates. The differences in hours of company school and military specialist school attendance are not significant.

Analysis by School Enrollment

How do vocational graduates of small, medium and large enrollment schools, as defined in this study, who reported post-high school, non-college education compare in terms of the non-college education index and the mean total accumulated hours for the different sources of non-college education compare? Table 172 provides the data.

There is no consistent trend that holds for each of the three graduating classes. The differences in the non-college index scores for the combined group are not significant. The conclusion is that the enrollment of the school attended is unrelated to the amount of non-college education that will be accumulated.

The upper section of Table 172 shows the mean accumulated hours for each source of education. With increased enrollment, the mean accumulated hours

Table 172. NON-COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST-HIGH SCHOOL EDUCATION BY ENROLLMENT OF HIGH SCHOOL ATTENDED

Sources of Post-High School Non-college Education		SCHOOL ENROLLMENT								
		< 500			500-1500			> 1500		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Private trade/technical school		86	116.5	128.1	74	127.8	188.5	84	69.4	69.5
Public trade/technical school		115	64.9	96.3	91	77.6	102.8	113	61.0	78.7
Business-commercial school		31	59.9	86.8	37	72.9	91.5	31	78.0	94.7 ▲
Adult continuation school		66	21.6	27.5	55	24.4	29.7	74	37.6	46.3 ▲
Military specialist school		331	71.3	72.9	348	77.9	83.6	312	79.2	85.7
Company course or school		99	60.6	114.5	123	41.5	66.7	122	38.3	42.6 ▼
Other than above		105	47.9	52.4	109	97.0	167.2	78	72.3	119.7
Non-college Education Index *		394	78.2	112.2	407	86.0	140.7	383	70.3	93.6
Non-college Education Index		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	154	118.6	131.1	165	101.4	138.7	142	97.3	100.3
	1958	215	79.8	107.2	203	94.4	124.1	183	84.2	99.0
	1962	191	64.2	72.9	213	67.8	77.9	218	70.7	89.8
	Combined	564	85.5	107.0	583	86.4	115.1	544	82.2	96.3

* Excluding military school attendance

shows an increasing trend for business-commercial schools and adult continuation schools, and a decreasing trend for company course schools. A plausible interpretation for these trends is lacking.

Analysis by Race of Graduate

How do Negro and white graduates who reported post-high school, non-college level education compare in terms of the mean total hours of such education accumulated? The lower section of Table 173 shows the non-college education index values.

The small number of Negroes who reported non-college education precludes placing confidence in the comparison. The results are suggestive, not conclusive. For each of the three year of graduation groups, the Negro graduates

Table 173. NON-COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST-HIGH SCHOOL EDUCATION BY RACE OF HIGH SCHOOL GRADUATE

Courses of Post-High School Non-college Education		RACE OF VOCATIONAL GRADUATE								
		White			Negro			Other		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Private trade/technical school		222	106.5	141.7	15	68.9	66.4	2	54.0	46.0
Public trade/technical school		300	66.3	91.7	12	102.8	124.5	2	56.0	44.0
Business-commercial school		93	69.9	93.2	5	74.4	59.7	1	100.0	0.0
Adult continuation school		186	28.2	37.1	6	18.7	19.3	1	100.0	0.0
Military specialist school		944	77.1	82.4	32	56.9	35.1	2	66.0	34.0
Company course or school		335	46.6	78.9	5	8.8	6.6	0	0.0	0.0
Other than above		275	73.1	125.3	15	61.9	131.4	0	0.0	0.0
Non-college Education Index *		1117	78.6	118.5	49	73.4	105.1	3	141.0	185.3
Non-college Education Index		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	441	106.3	127.7	14	96.7	67.3	1	32.0	0.00
	1958	571	86.8	112.3	19	70.7	82.8	1	12.0	0.00
	1962	583	67.8	79.6	30	60.2	75.1	2	256.0	248.0
	Combined	1601	85.3	107.6	64	70.5	77.0	4	139.0	210.9

* Excluding military school attendance

have a lower non-college education index score than the white graduates. This suggests that Negro graduates accumulate less post-high school, non-college level education. The study has no data to indicate why this might be so. The difference is in contrast with the finding that Negro vocational graduates who attended college accumulated more college hours than their white counterparts. It is possible that the Negro's poorer acceptance into the trades may weaken his resolve to pursue non-college education.

Analysis by Type of Graduate

How do academic and vocational graduates who reported post-high school, non-college level education compare in terms of the mean total hours of such education accumulated? The lower section of Table 174 shows the non-college education index values.

Table 174. NON-COLLEGE EDUCATION: MEAN TOTAL ACCUMULATED CLASS HOURS OF POST-HIGH SCHOOL EDUCATION BY TYPE OF HIGH SCHOOL GRADUATE

Sources of Post-High School Non-college Education		TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
Private trade/technical school . .		111	121.0	168.0	69	149.3	161.7
Public trade/technical school . .		125	87.2	108.8	57	117.8	137.4
Business-commercial school		49	83.0	96.5	62	70.7	73.0
Adult continuation school		86	34.0	44.5	27	22.8	33.9
Military specialist school		418	77.3	87.4	322	75.8	67.8
Company course or school		159	46.2	84.1	85	47.4	82.5
Other than above		97	74.8	121.8	70	97.5	159.7
Non-college Education Index *		503	88.0	121.0	320	96.6	132.8
Non-college Education Index		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	177	113.2	137.8	172	121.5	143.3
	1958	271	94.9	131.4	188	83.2	91.0
	1962	273	79.1	94.0	152	74.8	70.0
	Combined	723	93.3	121.0	512	93.6	108.6

* Excluding military school attendance

The direction of the differences are not consistent for the three year of graduation groups. The mean differences are not significant. The conclusion is that there is no difference in the amount of non-college education, over all sources of such education, accumulated by the two types of graduates.

The upper section of Table 174 shows that academic graduates who have attended trade or technical schools after high school accumulate substantially greater hours of such training than vocational graduates. The differences between the two types of graduates in other sources of non-college education are negligible. The difference in accumulated hours of private and public trade school education may be because vocational graduates very often continue in the trade studied in high school, whereas academic graduates start their trade training from the beginning. The latter would necessarily have to accumulate more hours to learn the beginning of a trade.

11

THEIR OFF THE JOB INTERESTS & AFFILIATIONS

☐ The Whole Person Concept of Education 1

☐ The Graduate's Conversational Interests 3

☐ The Graduate's Leisure Activities 15

☐ The Graduate's Organization Affiliation 29

CHAPTER 11 SUMMARY

Education of the Whole Person

1. Vocational versus general education. Vocational education has been criticized for neglecting education of the whole person, a criticism difficult to answer because the concept of whole-person education is poorly defined.

2. Three suggested dependent variables. It is assumed that the education of the whole person will be reflected in, among other variables, range of conversational interests, range of leisure activities, and degree of organizational affiliation. The three variables provide a basis for comparing vocational and academic graduates.

The Graduate's Conversational Interest

3. Year of graduation. The range of conversational interests increases slightly with years out of school. Frequency of engagement in some topics increases with age; whereas, with others, there is a decrease. Family, work, and sports are the top three topics of conversation for all year-of-graduation groups. The least frequently discussed topics--religion, labor-union matters, and arts and literature.

4. Type of school. There is no difference in range of conversational interests between vocational graduates from comprehensive and vocational schools.

5. School enrollment. There is no difference in range of conversational interests between vocational graduates from small, medium, and large enrollment schools.

6. Race of graduates. Negro graduates have a slightly greater range of conversational interests than do white graduates. There are differences also in relative topic preferences.

7. Academic versus vocational graduates. A comparison of the two types of graduates who had no college education indicates no significant difference in terms of conversational interests.

The Graduate's Leisure Activities

8. Year of graduation. The range of leisure activities decreases slightly with years out of school. Frequency of engagement in some activities; e.g., attending educational programs, attending spectator sports, engaging in team sports, etc., decreased with age. Frequency of other activities; e.g., working in home workshop, watching television, etc., increased with age. The top three leisure activities were reading newspapers, watching television, and listening to music.

(Continued in Appendix B)

CONCEPT OF EDUCATING THE WHOLE PERSON

Introduction

The concept of educating the whole person has long been accepted by the majority of educators in the United States. The basic idea of the concept is simple: education should seek to develop those areas of knowledge, skill, attitudes, interests and beliefs which are necessary for adult adjustment in comtemporary society. In effect, education is seen as preparation for life.

Interpretations of what are the necessary knowledges, skills, attitudes, etc. vary widely. They include sharp differences of opinion. The same is the case for the methods educators claim are the best for developing such learnings. There is, however, majority agreement on the basic concept. Those who embrace a three-R fundamentalist view are a minority.

The concept of education of the whole person has often been the basis for criticism of vocational education. Because of its emphasis upon trade training, vocational education has been criticized for neglecting the education of the whole person. The point made is that narrow trade training necessarily neglects areas of education which are covered in academic or general education programs. Moreover, the neglect comes at a critical time, near the end of the formative years when the influence of a broader education is most essential.

Such criticism is difficult to rebut because the concept of educating the whole person is deceptively simple. There is a lack of agreement on the criteria whereby the educational process can be evaluated in terms of how well it educates the whole person. Stated differently, there is no general agreement on the measurable dependent variables, excluding mere tests of knowledge and skill, that presumably reflect such education.

The present chapter is concerned with the issue of whether or not vocational education, compared with academic education, trains so narrowly that its graduates reflect a lesser degree of education of their whole persons. Three dependent variables were adopted which presume to have some relevance to the education-of the-whole-person concept. It is not claimed that they are the only relevant variables, nor even the most important ones. Instead, they should be looked upon as providing a starting point for the comparison of vocational and academic education in terms of the whole person concept, as put forth by the general educator. The three dependent variables concern post-graduation (1) range and type of conversational interest, (2) range and type of leisure activities, and (3) degree of participation in community and other organizations. The underlying assumption is that the education of the whole person is reflected in the things he talks about, the ways he spends his leisure time, and the degree to which he participates in the organizations of his community.

THE GRADUATES CONVERSATIONAL INTERESTS

Introduction

The graduates were asked to indicate how frequently they talked about the following topics when they got together socially with others:

1. Work
2. Religion
3. Politics
4. Business conditions
5. World affairs
6. National affairs
7. State affairs
8. Community problems
9. Hobbies
10. Sports and athletics
11. Music, art, literature
12. Government matters
13. Labor union matters
14. Family

The answer frequency categories were: (1) almost never, (2) infrequently, (3) frequently, and (4) almost always. The ratings provided the basis for a breadth of conversational interest index. This measure was obtained by multiplying the mean frequency rating by 25. Each rating was given the value of the answer category indicated above. For a more complete description of the measure, see Chapter 3.

The rationale for the use of the measure is the reasoning that conversational interests are one dimension of the many that are relevant to the concept of education of the whole person. The index is a measure of breadth of conversational interest. It is a reasonable assumption that a person who engages in a wide variety of conversational topics demonstrates a broad interest in the world around him, and sufficient knowledge to provide the basis of conversation. In contrast with the person who has a narrow range of interests, such a person may be considered a more broadly educated person. It must be kept in mind that the concern is with people in general, not with individuals who may be exceptions to the rule.

Quite apart from the measure's usefulness for the concept of education of the whole person, it does describe one dimension of the vocational graduate —— what he talks about.

Analysis by Year of Graduation

How does the conversational interest measure change with increased years out of school? Does the range of conversational interests increase as the graduate's range of experiences increase with more years out of school? Table 175 presents a frequency, percentage and cumulative percentage distribution of the measure.

Table 175. CONVERSATIONAL INTERESTS INDEX: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Conversation Interests	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
100	0	0.0	100.0	3	0.2	100.0	0	0.0	100.0	3	0.1	100.0
93-99	2	0.2	100.0	5	0.3	99.8	1	0.1	100.0	8	0.2	99.9
85-92	6	0.6	99.8	15	1.0	99.5	22	0.9	99.9	43	0.8	99.7
78-84	35	3.3	99.2	55	3.6	98.5	74	3.3	99.0	164	3.4	98.9
70-77	206	19.3	95.9	263	17.3	94.9	349	15.5	95.7	820	16.8	95.5
63-69	353	33.1	76.6	448	29.4	77.6	579	25.6	80.2	1389	28.6	78.7
55-62	266	25.0	43.5	413	27.1	48.2	633	28.0	54.6	1314	27.0	50.1
48-54	130	12.2	18.5	201	13.2	21.1	342	15.2	26.6	674	13.9	23.1
40-47	46	4.3	6.3	85	5.6	7.9	163	7.2	11.4	297	6.1	9.2
33-39	19	1.8	2.0	30	2.0	2.3	76	3.4	4.2	125	2.5	3.1
25-32	2	0.2	0.2	5	0.3	0.3	19	0.8	0.8	27	0.6	0.6
Number	1065			1523			2258			4864		
Mean	62.38			61.90			60.30			61.25		
Median	63			63			61			61		
S.D.	9.27			10.14			10.54			10.20		

The mean values for 1962, 1958, and 1953 are respectively 60.3, 61.9, and 62.4, indicating a slight increase in the conversational interest index with increased years out of school. The overall trend is confirmed in the mean frequency of conversation ratings of the individual topics from which the conversational interest index was derived. The mean ratings are shown in Table 176.

The arrows at the left of the table indicate a consistent trend of a higher mean rating with increased years out of school. Thus, the frequency with which graduates talk about business conditions, national affairs, state affairs, community problems, and family increases with age. This is to be expected. Some items do not show a consistent increasing trend, but they do show higher mean ratings for the 1953 graduates. They are religion, politics, government matters, and labor unions. Conversational topics that seem to decrease in frequency with age are sports and athletics, music, art, literature, and hobbies. The fact that there are changes in conversational interests with age explains the relatively slight increase in breadth of conversational interest with age.

The rank order of the conversational topics based upon mean frequency ratings for all years combined is given below:

1.	Family	2.9
2.	Work	2.8
3.	Sports and athletics	2.8
4.	Hobbies	2.7
5.	World affairs	2.6
6.	National affairs	2.6
7.	Business conditions	2.5
8.	State affairs	2.4
9.	Community problems	2.4
10.	Government matters	2.4
11.	Politics	2.3
12.	Religion	2.0
13.	Labor union	2.0
14.	Music, art, literature	2.0

The rank order does not change very much through the years. For example, family, work and sports were the top three topics for all graduation class year groups, whereas, religion, labor union matters and fine arts and literature were the bottom three topics for all groups.

Table 176. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS * OF CONVERSATION TOPICS BY YEAR OF GRADUATION

Topics of Conversation	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
Your work	1136	2.8	.68	1593	2.9	.70	2366	2.8	.74	5114	2.8	.72
Religion	1127	2.1	.74	1584	2.1	.74	2372	2.0	.77	5101	2.0	.76
Politics	1120	2.4	.75	1569	2.4	.81	2340	2.2	.80	5047	2.3	.80
▲ Business conditions	1116	2.6	.74	1570	2.5	.81	2340	2.4	.84	5043	2.5	.81
World affairs	1126	2.6	.71	1583	2.6	.74	2363	2.6	.78	5091	2.6	.75
▲ National affairs	1124	2.7	.71	1578	2.6	.72	2359	2.6	.78	5079	2.6	.75
▲ State affairs	1111	2.5	.72	1557	2.4	.73	2334	2.3	.78	5021	2.4	.76
▲ Community problems	1109	2.6	.76	1562	2.4	.80	2344	2.2	.84	5032	2.4	.82
Your hobbies	1110	2.6	.85	1566	2.7	.88	2351	2.7	.90	5046	2.7	.89
Sports and athletics	1110	2.8	.91	1565	2.8	.89	2355	2.9	.88	5046	2.8	.89
Music, art, literature, etc.	1106	2.0	.83	1572	2.0	.89	2343	2.1	.92	5040	2.0	.90
Government matters	1105	2.5	.76	1574	2.4	.77	2336	2.4	.81	5034	2.4	.79
Labor union matters	1113	2.1	.91	1570	2.0	.90	2315	2.0	.89	5016	2.0	.90
▲ Your family	1111	3.0	.72	1576	2.9	.77	2336	2.8	.83	5042	2.9	.80
CONVERSATION MEASURE	1065	62.4	9.27	1523	61.9	10.14	2258	60.3	10.54	—	—	—

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

▲ = Consistent higher mean rating with increased years out of school

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of the breadth of conversational interest measure? If, as claimed, the vocational graduates of comprehensive schools are exposed to more broadening influences, is it reflected in the measure? The bottom section of Table 178. presents the data.

Table 177. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS* OF CONVERSATION TOPICS BY TYPE OF SCHOOL

Topics of Conversation		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
Your work		2999	2.8	.72	2115	2.9	.71
Religion		2991	2.0	.73	2110	2.1	.78
Politics		2957	2.3	.79	2090	2.3	.80
Business conditions		2955	2.5	.82	2088	2.5	.80
World affairs		2987	2.6	.74	2104	2.6	.78
National affairs		2983	2.6	.74	2096	2.6	.77
State affairs		2944	2.4	.76	2077	2.4	.76
Community problems		2949	2.4	.81	2083	2.4	.83
Your hobbies		2959	2.6	.89	2087	2.7	.88
Sports and athletics		2952	2.8	.90	2094	2.9	.87
Music, art, literature, etc.		2958	2.0	.89	2082	2.0	.90
Government matters		2955	2.4	.79	2079	2.4	.80
Labor union matters		2939	2.0	.90	2077	2.0	.91
Your family		2961	2.9	.80	2081	2.9	.80
CONVERSATION MEASURE		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	659	62.6	9.03	406	62.0	9.64
	1958	864	61.2	10.09	660	62.8	10.13
	1962	1331	60.1	10.49	927	60.6	10.60
	Combined	2868	61.01	10.11	1997	61.59	10.31

* 1 = Almost never; 2 = Infrequently; 3 = Frequently;
4 = Almost always

There are no significant differences in the conversational interest index between the graduates of each type of school for any of the year of graduation groups or for the combined groups. The conclusion is that the type of school from which the graduate comes does not influence his future breadth of conversational interests.

Are there any differences in the mean frequency ratings given the individual topics of conversation by the graduates of the two types of schools? The ratings are shown in the upper section of Table 177. The rank order of the topics based on mean ratings appears to be much the same for both groups. Comparisons of individual item ratings reveal no substantial differences. The conclusion is that the type of school attended is not a variable influencing future conversational interests.

Analysis by Enrollment

How do the vocational graduates from small, medium and large enrollment schools, as defined by this study, differ in terms of the breadth of conversational interest index? Is there a significant trend? The bottom section of Table 178 presents the data.

The measure neither increases nor decreases as a function of school enrollment. The conclusion is that school enrollment is not a variable influencing the future breadth of conversational interest.

Are there any differences in the mean frequency ratings given the individual topics of conversation by the graduates from small, medium and large schools? The ratings are shown in the upper section of Table 178. There are no consistent trends among the mean ratings. Furthermore, the rank order of the topics, based upon mean ratings, is essentially the same for the three enrollment categories. The conclusion is that future conversational interests are unaffected by the enrollment of the high school attended.

Table 178. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS *
OF CONVERSATION TOPICS BY SCHOOL ENROLLMENT

Topics of Conversation		SIZE OF SCHOOL ENROLLMENT								
		< 500			500-1500			>1500		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Your work		1707	2.8	.74	1903	2.8	.72	1504	2.9	.68
Religion		1709	2.0	.75	1892	2.1	.76	1500	2.0	.76
Politics		1678	2.2	.81	1880	2.4	.77	1489	2.3	.81
Business conditions		1679	2.5	.83	1878	2.5	.81	1486	2.5	.80
World affairs		1698	2.6	.73	1892	2.6	.76	1501	2.6	.77
National affairs		1697	2.6	.76	1883	2.6	.74	1499	2.6	.75
State affairs		1690	2.4	.77	1831	2.4	.75	1500	2.4	.75
Community problems		1672	2.4	.83	1869	2.4	.80	1491	2.3	.84
Your hobbies		1678	2.6	.90	1876	2.7	.88	1492	2.7	.87
Sports and athletics		1685	2.8	.92	1873	2.9	.88	1488	2.8	.87
Music, art, literature, etc.		1680	2.0	.91	1875	2.1	.89	1485	2.0	.89
Government matters		1677	2.4	.81	1872	2.4	.77	1485	2.4	.79
Labor union matters		1679	2.0	.90	1858	2.0	.89	1479	2.0	.91
Your family		1681	2.9	.81	1874	2.9	.79	1487	2.9	.81
CONVERSATION MEASURE		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	385	62.4	9.44	392	62.5	9.05	288	62.1	9.34
	1958	504	61.2	10.43	591	61.9	9.72	429	62.6	10.41
	1962	726	60.0	10.68	810	61.0	10.47	727	59.9	10.42
	Combined	1620	60.9	10.36	1803	61.6	9.95	1442	61.2	10.28

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

Analysis by Race of Graduate

How do Negro and white graduates differ in terms of the breadth of conversational interest index? The lower section of Table 179 presents the data.

Table 179. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS * OF CONVERSATION TOPICS BY RACE OF GRADUATE

Topics of Conversation		RACE OF GRADUATE								
		White			Negro			Other		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Your work		4732	2.8	.71	334	2.8	.82	19	2.9	.83
Religion		4717	2.0	.74	335	2.4	.83	19	1.5	.60
Politics		4670	2.3	.80	330	2.5	.82	19	2.1	.64
Business conditions		4668	2.5	.81	326	2.4	.91	19	2.4	.74
World affairs		4716	2.6	.75	326	2.9	.78	19	2.8	.69
National affairs		4702	2.6	.74	329	2.8	.80	19	2.7	.64
State affairs		4646	2.4	.75	327	2.6	.83	18	2.3	.74
Community problems		4656	2.4	.81	330	2.7	.90	18	1.9	.78
Your hobbies		4670	2.7	.88	327	2.8	.92	19	2.6	.98
Sports and athletics . . .		4671	2.8	.89	328	3.2	.80	18	2.8	.96
Music, art, literature, etc.		4663	2.0	.89	329	2.6	.94	18	2.0	1.05
Government matters		4664	2.4	.78	322	2.6	.85	19	2.5	.82
Labor union matters		4645	2.0	.90	323	2.1	.97	19	2.0	.86
Your family		4669	2.9	.79	325	2.9	.93	19	2.6	.88
CONVERSATION MEASURE		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1016	62.3	9.16	43	65.4	10.96	3	58.0	7.12
	1958	1404	61.6	9.87	105	66.5	12.05	5	56.2	9.50
	1962	2069	60.0	10.34	169	64.3	11.92	8	64.9	8.83
	Combined	4506	61.0	10.0	318	65.2	11.86	16	60.9	9.45

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

Within each graduating group, the Negro graduates have a higher index score than the white graduates. This suggests that Negro graduates have a broader range of conversational interests than white graduates. One plausible interpretation is that Negroes who have graduated from high school have a greater interest in many of the topics listed because of intensified efforts in the civil rights movement in recent years.

What are the topics which show the greatest difference in mean frequency ratings between Negro and white graduates? The upper section of the table shows the mean ratings. There are some interesting differences in the rank order of the topics shown below:

	WHITE GRADUATES		NEGRO GRADUATES	
1.	Family	2.9	Sports and athletics	3.2
2.	Work	2.8	Family	2.9
3.	Sports and athletics	2.8	World affairs	2.9
4.	Hobbies	2.7	Work	2.8
5.	World affairs	2.6	National affairs	2.8
6.	National affairs	2.6	Hobbies	2.8
7.	Business conditions	2.5	Community problems	2.7
8.	State affairs	2.4	State affairs	2.6
9.	Community problems	2.4	Music, art, literature, etc.	2.6
10.	Government matters	2.4	Government matters	2.6
11.	Politics	2.3	Politics	2.5
12.	Religion	2.0	Religion	2.4
13.	Music, art, literature, etc.	2.0	Business conditions	2.4
14.	Labor union matters	2.0	Labor union matters	2.1

Negro graduates show higher mean ratings in sports, community problems, world affairs, religion, politics, national affairs, state affairs, government matters, and music, art and literature, etc.

Analysis by Type of Graduate

How do vocational and academic graduates compare in terms of the breadth of conversational interest measure. The bottom section of Table 180 presents the data for all graduates, regardless of level of education completed.

Table 180. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS* OF CONVERSATION TOPICS BY TYPE OF GRADUATE

(Based on all graduates regardless of formal educational level attained)

Topics of Conversation		TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
Your work		5114	2.8	.72	1723	2.8	.76
Religion		5101	2.0	.76	1743	2.2	.75
Politics		5047	2.3	.80	1739	2.6	.77
Business conditions		5043	2.5	.81	1727	2.5	.81
World affairs		5091	2.6	.75	1740	2.8	.70
National affairs		5079	2.6	.75	1743	2.8	.68
State affairs		5021	2.4	.76	1750	2.4	.76
Community problems		5032	2.4	.82	1730	2.4	.81
Your hobbies		5046	2.7	.89	1729	2.5	.89
Sports and athletics		5046	2.8	.89	1726	3.0	.86
Music, art, literature, etc.		5040	2.0	.90	1728	2.3	.90
Government matters		5034	2.4	.79	1736	2.6	.75
Labor union matters		5016	2.0	.90	1731	1.8	.84
Your family		5042	2.9	.80	1731	2.8	.82
CONVERSATION MEASURE		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1065	62.4	9.27	421	64.3	8.48
	1958	1524	61.9	10.14	559	62.8	9.24
	1962	2258	60.3	10.54	783	61.6	10.03
	Combined	4865	61.2	10.20	1763	62.6	9.50

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 1 = Almost always

Within each graduating class group, the academic graduates have a slightly higher conversational interest score than the vocational graduates. The differences, while consistent, are not statistically significant. The consistency of the differences, however, do suggest that academic graduates have a slightly broader range of conversational interests.

How do the graduates compare in terms of the mean ratings given the individual items that comprise the conversational index measure? The data is shown in the upper section of the table. The academic graduates gave higher mean frequency of conversation ratings to the following topics: religion, politics, world affairs, national affairs, sports, music and art, and government matters. The vocational graduates yielded higher mean ratings on hobbies and labor union matters. The magnitude of the differences are not substantial, particularly when one considers the much higher percentage of college attendance and completion among the academic graduates.

Table 180 compared vocational and academic graduates without regard to the level of formal educational attained. How would vocational and academic graduates with no college education compare in terms of the conversation interest index and the mean frequency ratings of the topics that comprise the index? Table 181 provides the data for such graduates from comprehensive schools only.

The index scores for the two types of graduates are not significantly different. The conclusion is that the type of high school curriculum a graduate has followed does not influence the breadth of his conversational interests, as measured by the index.

Comparison of the mean ratings indicate that vocational graduates are slightly more inclined to talk about labor union matters, whereas, academic graduates are slightly more inclined to talk about politics and music, art, and literature. The differences on the other topics of conversation are either negligible or non-existant. The overall conclusion is that the type of curriculum a graduate has followed has, with the exception of a few topics, a negligible influence on type of conversational interests in future years.

The reader is reminded that the data herein discussed is what graduates claim they talk about and how frequently. There are indications that what is claimed may correspond with what they do talk about. For example, it is not unexpected that vocational graduates talk more frequently about labor union matters than academic graduates. Nor is it very surprising that both academic

Table 181. CONVERSATIONAL INTEREST INDEXES AND MEAN FREQUENCY RATINGS OF * CONVERSATION TOPICS BY TYPE OF GRADUATE (Based on graduates from comprehensive schools only with no college level education)

Topics of Conversation	TYPE OF GRADUATE					
	Vocational			Academic		
	N	M	S.D.	N	M	S.D.
Your work	1730	2.9	.71	789	2.8	.76
Religion	1720	2.1	.79	788	2.1	.76
Politics	1702	2.2	.81	783	2.4	.78
Business conditions	1699	2.5	.81	788	2.5	.85
World affairs	1714	2.6	.79	784	2.7	.73
National affairs	1707	2.6	.76	780	2.7	.72
State affairs	1691	2.4	.77	788	2.4	.76
Community problems	1695	2.3	.84	776	2.4	.81
Your hobbies	1701	2.7	.88	777	2.6	.92
Sports and athletics	1712	2.9	.86	774	3.0	.84
Music, art, literature, etc.	1694	2.0	.90	772	2.2	.92
Government matters	1694	2.4	.81	782	2.5	.76
Labor union matters	1691	2.1	.92	776	1.9	.89
Your family	1701	2.9	.80	773	2.9	.83
CONVERSATION MEASURE	N	M	S.D.	N	M	S.D.
Year of Graduation 1953	305	61.3	10.0	172	62.9	8.9
1958	542	62.3	10.4	267	62.0	9.6
1962	771	60.4	10.7	357	61.4	11.1
Combined	1621	61.2	10.5	796	61.9	10.2

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

and vocational graduates talk more about work and family than, say, religion or labor union matters. Such agreements with expectation, while they do not validate the claims, do make them more credible.

THE GRADUATE'S LEISURE ACTIVITIES

Introduction

The graduates were asked to indicate how frequently they engaged in the following type of leisure activities:

1. Reading newspapers
2. Engaging in craft hobbies
3. Reading trade books, magazines, etc.
4. Attending spectator sports
5. Attending plays, concerts, ballet, etc.
6. Watching television programs
7. Reading general magazines
8. Working at home shop activities
9. Attending educational courses
10. Engaging in team sports
11. Engaging in performing arts
12. Visiting or entertaining friends
13. Reading non-fiction books
14. Collecting stamps, coins, etc.
15. Attending lectures & discussions
16. Engaging in individual sports
17. Listening to music at home
18. Going to the movies

The answer frequency categories were: (1) almost never, (2) infrequently, (3) frequently, and (4) almost always. The individual ratings provided the basis for a breadth of leisure activity index. This measure was obtained by multiplying the mean frequency rating of the graduate by 25. Each rating was given the value of the answer category indicated above, thereby giving the measure a range of 25 to 100. For a more complete description of the measure, see Chapter 3.

The rationale for the use of the measure was the reasoning that leisure activities are relevant to the concept of educating the whole person. The assumption is that a broad range of leisure activities reflect a broad and balanced interest in non-vocational activities. The defect of the assumption is that a narrow range of leisure activities does not necessarily mean a narrow interest in such activities. To a degree, conditions of income and opportunity will influence and determine leisure activities. Despite this weakness of the measure, it was felt that it explored a relevant dimension of the "total" individual. Presumably, conditions of money and opportunity are randomly distributed among some of the major independent variables that are analyzed in terms of the measure, e.g. type of school and school enrollment.

Analysis by Year of Graduation

How does the leisure activity index change with increased years out of school? Does the range of such activities increase, decrease or remain unchanged with age? Table 182 presents a frequency, percentage and cumulative percentage distribution of the index.

Table 182. LEISURE ACTIVITY INDEX: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Leisure Activities	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
100	0	0.0	100.0	1	0.1	100.0	0	0.0	100.0	1	0.1	100.0
93-99	0	0.0	100.0	0	0.0	99.9	1	0.1	100.0	1	0.1	99.9
85-92	0	0.0	100.0	1	0.1	99.9	1	0.1	99.9	2	0.1	99.8
78-84	4	0.4	100.0	8	0.5	99.8	17	0.8	99.8	29	0.5	99.7
70-77	23	2.1	99.6	60	4.0	99.3	111	4.9	99.0	194	3.9	99.2
63-69	128	11.9	97.5	185	12.3	95.3	317	14.2	94.1	632	13.1	95.3
55-62	333	31.0	85.6	504	33.7	83.0	708	31.7	79.9	1548	32.1	82.2
48-54	339	31.5	54.6	417	27.9	49.3	601	26.9	48.2	1363	28.3	50.1
40-47	213	19.8	23.1	265	17.7	21.4	365	16.4	21.3	846	17.6	21.8
33-39	33	3.1	3.3	50	3.4	3.7	100	4.5	4.9	185	3.8	4.2
25-32	2	0.2	0.2	5	0.3	0.3	10	0.4	0.4	18	0.4	0.4
Number	1075			1496			2231			4819		
Mean	54.00			54.86			55.06			54.74		
Median	54			55			55			54		
S.D.	7.86			8.49			9.05			8.64		

The mean values for 1962, 1958 and 1953 are respectively 55.1, 54.9 and 54.0, indicating a tendency for the active range of leisure activities to decrease with age. That does not mean time spent in leisure activities decreases within two to eleven years out of school. It implies only a shrinkage in the range of such activities. The change, however, is very slight within the years spanned by the study. Later data will show why this is so.

The mean frequency ratings for the different kinds of leisure activities are shown in Table 183.

The leisure activities are shown grouped in six categories: (1) reading activities, (2) self-education activities, (3) hobby activities, (4) athletic activities, (5) fine arts activities, and (6) popular entertainment activities. The arrows at the far left of the table indicate the direction of a consistent trend by year of graduation. As the years go by, the frequency of engagement in the following activities increases: newspaper reading, home workshop activities and T. V. watching. Activities that show a consistent decreasing trend with increased years out of school are: attending educational courses, attending spectator sports, engaging in team sports, and listening to music for pleasure. Other activities which show a decrease, albeit not a decrease for each year of graduation group, are: attending lectures and discussion groups, engaging in hobbies, attending plays and concerts, engaging in individual sports, and going to the movies.

For all vocational graduates combined, the rank order of leisure activities, based upon the mean ratings shown in Table 183 is as follows:

	Type of Leisure Activity	Mean Rating*
1.	Reading newspapers	3.4
2.	Watching T.V. programs	2.9
3.	Listening to music for pleasure	2.9
4.	Entertaining or visiting friends	2.8
5.	Engaging in individual sports	2.7
6.	Reading general magazines	2.6
7.	Reading trade books and periodicals	2.5
8.	Going to the movies	2.4
9.	Attending spectator sports	2.3
10.	Working in home workshop	2.2
11.	Engaging in team sports	2.0
12.	Reading non-fiction	2.0
13.	Attending educational courses	1.9

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* 1 = Almost never, 2 = Infrequently, 3 = Frequently and 4 = Almost always

Table 183. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY YEAR OF GRADUATION

	Types of Leisure Activities	YEAR OF GRADUATION											
		1953			1958			1962			Combined		
		N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
▲	Reading newspapers	1126	3.6	.69	1591	3.5	.79	2371	3.2	.82	5107	3.4	.80
1	Reading non-fiction books	1114	2.0	.85	1556	2.0	.86	2333	2.0	.88	5022	2.0	.87
	Reading general magazines	1115	2.6	.84	1574	2.7	.82	2360	2.6	.83	5068	2.6	.83
	Reading trade books/periodicals	1118	2.5	.86	1573	2.5	.90	2360	2.4	.89	5070	2.5	.89
2▼	Attending educational courses	1107	1.8	.90	1563	1.9	.96	2320	2.0	1.02	5009	1.9	.97
	Attending lectures, discussions	1111	1.5	.76	1568	1.5	.80	2333	1.6	.84	5031	1.6	.81
	Engaging in craft hobbies	1120	1.9	.91	1576	1.9	.90	2361	2.0	.92	5076	1.9	.91
3▲	Working in a home workshop	1114	2.3	.96	1564	2.2	.97	2340	2.1	.98	5036	2.2	.98
	Collecting stamps, coins, etc.	1107	1.4	.82	1550	1.5	.86	2311	1.5	.80	4987	1.5	.83
▼	Attending spectator sports	1127	2.1	.83	1569	2.2	.84	2344	2.4	.85	5059	2.3	.85
4▼	Engaging in team sports	1119	1.8	.88	1573	1.9	.94	2344	2.1	.97	5055	2.0	.95
	Engaging in individual sports	1115	2.5	.77	1571	2.7	.77	2364	2.7	.79	5069	2.7	.78
	Attending plays, concerts, etc.	1115	1.4	.64	1549	1.4	.65	2331	1.5	.68	5013	1.4	.66
5	Engaging in performing arts	1085	1.3	.63	1528	1.3	.70	2292	1.4	.81	4923	1.4	.74
▼	Listening to music at home	1117	2.8	.86	1573	2.9	.88	2354	3.0	.88	5063	2.9	.88
▲	Watching T.V. programs	1108	3.1	.81	1569	3.0	.88	2357	2.8	.94	5053	2.9	.91
6	Entertaining/visiting friends	1112	2.7	.58	1568	2.8	.62	2348	2.8	.72	5046	2.8	.66
▼	Going to movies	1128	2.0	.69	1583	2.3	.71	2348	2.6	.69	5078	2.4	.74
	LEISURE ACTIVITY MEASURE	1075	54.0	7.86	1496	54.9	8.49	2231	55.1	9.05	—	—	—

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

▲ ▼ = Indicates direction of mean ratings with increased years out of school

14.	Engaging in craft hobbies	2.9
15.	Attending educational discussion groups	1.6
16.	Collecting stamps, coins, other objects	1.5
17.	Attending plays and concerts	1.4
18.	Engaging in performing arts	1.4

The rank order of leisure activities in terms of the six groups defined previously, based upon a mean of the mean ratings, is as follows:

1.	General reading activities	2.7
2.	Popular entertainment	2.6
3.	Sports and athletic activities	2.1
4.	Self-education activities	1.9
5.	Hobbies and home crafts	1.9
6.	Fine arts activities	1.8

Analysis by Type of School

How do the vocational graduates of comprehensive and vocational schools compare in terms of breadth of leisure activities? The bottom section of Table 184 presents the data.

There are no significant differences in the leisure activity indexes between graduates from the two types of schools. The conclusion is that the type of school from which the graduate comes does not influence his future range of leisure activities.

Do the graduates from the two types of schools differ in the mean ratings given to the indivdual types of leisure activites? The ratings are shown in the upper section of Table 184. The rank order of leisure activities, based on mean ratings, is essentially the same for both groups. There are no significant differences between the mean ratings for specific activities. The conclusion is that the type of school attended is not a variable influencing specific future leisure time activities of vocational course graduates.

Table 184. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY TYPE OF SCHOOL

Types of Leisure Activities		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
1	Reading newspapers	2995	3.4	.82	2112	3.4	.78
	Reading non-fiction books	2949	2.0	.86	2073	2.0	.87
	Reading general magazines	2972	2.6	.83	2096	2.7	.83
2	Reading trade books/periodicals	2981	2.5	.87	2089	2.4	.90
	Attending educational courses	2936	1.9	.97	2073	1.9	.97
	Attending lestures, discussions	2950	1.5	.79	2081	1.6	.84
3	Engaging in craft hobbies	2983	1.9	.91	2093	1.9	.91
	Working in a home workshop	2954	2.2	.99	2082	2.2	.96
	Collecting stamps, coins, etc.	2929	1.5	.82	2058	1.5	.84
4	Attending spectator sports	2972	2.2	.84	2087	2.3	.86
	Engaging in team sports	2959	1.9	.94	2096	2.0	.96
	Engaging in individual sports	2977	2.6	.78	2092	2.7	.78
5	Attending plays, concerts, etc.	2940	1.4	.65	2073	1.5	.68
	Engaging in performing arts	2892	1.4	.74	2031	1.4	.76
	Listening to music at home	2969	2.9	.88	2094	2.9	.88
6	Watching T.V. programs	2962	2.9	.91	2091	3.0	.90
	Entertaining/visiting friends	2952	2.8	.66	2094	2.8	.66
	Going to movies	2978	2.4	.74	2100	2.4	.74
LEISURE ACTIVITY MEASURE		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	658	54.0	7.73	417	54.0	8.07
	1958	851	54.5	8.49	646	55.3	8.46
	1962	1305	54.8	8.94	926	55.4	9.19
	Combined	2827	54.5	8.56	1993	55.1	8.75

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

Analysis by Enrollment

Do the vocational graduates from small, medium and large enrollment schools, as defined in this study, differ in terms of the lesirue activity index? Is there a significant trend? The lower section of Table 185 presents the data.

Table 185. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY SCHOOL ENROLLMENT

	Types of Leisure Activities	SIZE OF SCHOOL ENROLLMENT								
		< 500			500-1500			> 1500		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
	Reading newspapers	1709	3.4	.81	1895	3.4	.79	1503	3.4	.81
1	Reading non-fiction books	1676	2.0	.87	1870	2.0	.87	1476	2.0	.86
	Reading general magazines	1690	2.6	.84	1882	2.6	.82	1496	2.6	.82
	Reading trade books/periodical	1690	2.5	.88	1883	2.4	.88	1497	2.5	.90
2	Attending educational courses	1658	1.9	.95	1870	1.9	.98	1481	2.0	.99
	Attending lectures, discussion	1669	1.5	.82	1875	1.6	.82	1487	1.6	.84
	Engaging in craft hobbies	1695	1.9	.91	1885	1.9	.91	1496	1.9	.91
3	Working in a home workshop	1673	2.2	.99	1876	2.1	.97	1487	2.1	.97
	Collecting stamps, coins, etc.	1679	1.5	.80	1812	1.5	.83	1496	1.5	.85
	Attending spectator sports	1684	2.2	.86	1881	2.3	.84	1494	2.2	.84
4	Engaging in team sports	1684	1.9	.94	1871	2.0	.96	1500	2.0	.94
	Engaging in individual sports	1687	2.7	.78	1879	2.7	.78	1503	2.7	.79
	Attending plays, concerts, etc	1652	1.4	.64	1868	1.5	.68	1493	1.4	.66
5	Engaging in performing arts	1662	1.4	.73	1788	1.4	.77	1473	1.4	.74
	Listening to music at home	1685	2.9	.88	1886	2.9	.88	1492	2.9	.87
	Watching T.V. programs	1681	2.9	.91	1879	2.9	.91	1493	2.9	.90
6	Entertaining/visiting friends	1681	2.8	.66	1874	2.8	.67	1491	2.8	.66
	Going to movies	1693	2.4	.75	1882	2.4	.73	1503	2.4	.74
LEISURE ACTIVITY MEASURE		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	379	54.2	7.80	402	54.1	7.8	294	53.6	8.00
	1958	497	54.5	8.52	574	54.8	8.46	426	55.2	8.47
	1962	710	54.9	9.29	808	55.4	8.68	713	54.9	9.21
	Combined	1590	54.6	8.73	1794	54.9	8.44	1436	54.7	8.78

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

The breadth of leisure activity index is not significantly related to school enrollment. The conclusion is that school enrollment is not a variable influencing the vocational graduates' range of future leisure activities.

Are there any differences in the mean ratings of frequency of leisure activities that suggest a relationship with the enrollment of former schools? The ratings are shown in the upper section of Table 185. There are no significant trends among the mean ratings that suggest enrollment of the former school is a variable influencing frequency of leisure activities. The conclusion is that future leisure activities are uninfluenced by size of school enrollment.

Analysis by Race of Graduate

How do Negro and white graduates differ in terms of the leisure activity index? The bottom section of Table 186 presents the data.

Within each graduating class group, the Negro graduates have a higher index score than the white graduates. Although the differences are not significant, their consistency suggests that Negro graduates have a slightly broader range of leisure activities than white graduates, that is, they report a greater frequency of involvement in the leisure activities listed.

How do the Negro and white graduates compare in terms of mean ratings for the individual leisure activities? The upper section of Table 186 presents the data. The mean ratings of Negro graduates are greater for the following factors, listed in order of the magnitude of the difference:

1.	Engaging in team sports	(2.6 vs. 1.9)
2.	Attending spectator sports	(2.8 vs. 2.2)
3.	Engaging in performing arts	(1.8 vs. 1.2)
4.	Attending educational lectures	(1.9 vs. 1.5)
5.	Attending plays, concerts, etc.	(1.8 vs. 1.4)
6.	Listening to home music	(3.3 vs. 2.9)
7.	Reading non-fiction books	(2.3 vs. 2.0)

Table 186. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY RACE OF GRADUATE

	Types of Leisure Activities	RACE OF GRADUATES								
		White			Negro			Other		
			M	S.D.	N	M	S.D.	N	M	S.D.
	Reading newspapers	4721	3.4	.81	337	3.5	.73	19	3.5	.60
1	Reading non-fiction books	4652	2.0	.86	325	2.3	.89	18	2.3	1.10
	Reading general magazines	4694	2.6	.83	326	2.8	.83	18	2.7	.80
	Reading trade books/periodicals	4691	2.5	.89	332	2.5	.84	18	2.6	.83
2	Attending educational courses	4641	1.9	.97	322	2.0	1.00	19	2.4	1.26
	Attending lectures, discussion	4661	1.5	.79	324	1.9	.94	19	1.7	.96
	Engaging in craft hobbies	4699	1.9	.91	330	1.8	.92	19	1.8	.99
3	Working in a home workshop	4668	2.2	.98	320	1.9	.95	19	2.2	1.18
	Collecting stamps, coins, etc.	4620	1.5	.82	322	1.6	.86	19	1.5	.75
	Attending spectator sports	4685	2.2	.84	329	2.8	.83	17	2.5	.78
4	Engaging in team sports	4681	1.9	.93	326	2.6	1.01	19	1.9	.97
	Engaging in individual sports	4699	2.7	.77	324	2.5	.92	19	2.3	.80
	Attending plays, concerts, etc.	4637	1.4	.64	331	1.8	.85	17	1.7	.82
5	Engaging in performing arts	4563	1.3	.71	316	1.8	.98	18	1.2	.53
	Listening to music at home	4691	2.9	.88	325	3.3	.75	19	2.8	.87
	Watching T.V. programs	4673	2.9	.91	333	3.1	.86	18	2.8	.96
6	Entertaining/visiting friends	4671	2.8	.66	329	2.9	.72	18	2.6	.59
	Going to movies	4707	2.4	.74	325	2.5	.75	19	2.5	.75
LEISURE ACTIVITY MEASURE		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1027	53.9	7.75	43	57.6	9.25	3	52.7	5.31
	1958	1385	54.6	8.23	97	58.8	10.68	5	48.6	10.07
	1962	2042	59.7	8.82	170	59.0	10.44	8	63.1	8.21
	Combined	4471	54.5	8.41	310	58.7	10.37	16	56.6	10.72

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

The rank order of the six group of activities, based upon group means of individual mean ratings, differ for the two races.

	White Graduates		Negro Graduates	
1.	Popular entertainment	(2.70)	General reading	(2.86)
2.	General reading	(2.66)	Popular entertainment	(2.83)
3.	Sports and athletics	(2.26)	Sports and athletics	(2.63)
4.	Self-education	(1.96)	Fine arts activities	(2.30)
5.	Hobbies and crafts	(1.86)	Self-education	(2.13)
6.	Fine arts activities	(1.86)	Hobbies and crafts	(1.43)

Since it has been shown that neither the type of school nor the school enrollment influence the leisure activity index or the mean frequency ratings of the activities, it is reasonable to assume school factors are not the source of the differences between Negro and white graduate leisure activities. The differences are more likely the products of differences in social and cultural milieu. It must be remembered that the Negro in our survey is a high school graduate. He certainly does not correspond to the commonly held image of the Negro high school dropout. Relative to their respective numbers, a smaller percentage of Negroes graduate from high schools than do white students. Those that do may have greater upward strivings than do their white counterparts. This may account for some of the differences in leisure activities.

Analysis by Type of Graduate

How do vocational and academic graduates compare in terms of the leisure activity index? Do the academic graduates, perhaps because of their greater exposure to a broader education, have a greater breadth of leisure activities? The lower section of Table 187 presents the data. It should be understood that the percentage of college graduates and those who have had some college is greater among the academic graduates.

Within each of the graduating class groups, the academic graduates have a slightly higher leisure activity index score than do the vocational graduates.

Table 187. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY TYPE OF GRADUATE (Based on all graduates regardless of formal educational level attained.)

	Types of Leisure Activities	TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
1	Reading newspapers	5107	3.4	.80	1753	3.5	.73
	Reading non-fiction books	5022	2.0	.87	1731	2.8	.88
	Reading general magazines	5068	2.6	.83	1740	2.8	.78
2	Reading trade books/ periodicals	5070	2.5	.89	1733	2.5	.93
	Attending educational courses	5009	1.9	.97	1720	2.2	1.08
	Attending lectures, discussions	5031	1.6	.81	1733	1.9	.93
3	Engaging in craft hobbies	5076	1.9	.91	1746	1.7	.84
	Working in a home workshop	5036	2.2	.98	1723	1.7	.88
	Collecting stamps, coins, etc.	4987	1.5	.83	1746	1.5	.81
4	Attending spectator sports	5059	2.3	.85	1741	2.4	.81
	Engaging in team sports	5055	2.0	.95	1735	2.1	.98
	Engaging in individual sports	5069	2.7	.78	1732	2.6	.81
5	Attending plays, concerts, etc.	5013	1.4	.66	1736	1.7	.77
	Engaging in performing arts	4923	1.4	.74	1729	1.5	.87
	Listening to music at home	5063	2.9	.88	1743	3.0	.85
6	Watching T.V. programs	5053	2.9	.91	1731	2.8	.97
	Entertaining/visiting friends	5046	2.8	.66	1738	2.8	.68
	Going to movies	5078	2.4	.74	1742	2.3	.72
LEISURE ACTIVITY MEASURE		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1075	54.0	7.86	421	55.8	7.56
	1958	1497	54.9	8.49	559	55.5	7.90
	1962	2231	55.1	9.05	784	56.7	8.48
	Combined	4820	54.7	8.64	1764	56.1	8.10

* 1 = Almost always; 2 = Infrequently; 3 = Frequently; 4 = Almost always

The differences are not significant. However, their consistency suggests academic graduates may have a slightly greater involvement in leisure activities. The higher educational attainment in the academic graduate group may account for the differences.

How do the graduates compare in terms of the mean frequency ratings for the individual leisure activities and for the leisure activities grouped into the six categories described previously? The upper section of Table 187 shows the mean frequency ratings.

The academic graduates are more frequently engaged in the following activities:

1. Reading non-fiction books . . . . (2.8 vs. 2.0)
2. Attending educational courses . . . . . (2.2 vs. 1.9)
3. Attending lectures and discussions . . (1.9 vs. 1.6)
4. Attending plays, concerts, etc. . . . . (1.7 vs. 1.4)
5. Reading general magazines . . . . . . (2.8 vs. 2.6)

This may be a direct reflection of the very much higher percentage of academic graduates in the sample who attended college. Since a substantial number of the 1962 and 1958 academic graduates were still in college at the time of the survey, the differences may be a reflection of a college attendance period rather than what happens after formal education has been completed.

The vocational graduates are more frequently engaged in craft hobbies and home workshop activities.

The rank order of the six activities most frequently engaged in is essentially the same for both types of graduates:

	Academic Graduates		Vocational Graduates	
1.	Reading newspapers	(3.5)	Reading newspapers	(3.4)
2.	Listening to music	(3.0)	Listening to music	(2.9)
3.	Watching television	(2.8)	Watching television	(2.8)
4.	Visiting/entertaining friends	(2.8)	Visiting/entertaining friends	(2.8)
5.	Reading general magazines . .	(2.8)	Engaging in individual sports	(2.7)
6.	Reading non-fiction books . .	(2.8)	Reading general mazazines . .	(2.6)

The rank order of the six activity groups, based upon group means of individual mean frequency ratings, for the two types of graduates is as follows:

	Academic Graduates		Vocational Graduates	
1.	Self-educational activities	(3.3)	Popular entertainment	(2.7)
2.	General reading activities	(3.0)	General reading activities	(2.6)
3.	Popular entertainments	(2.6)	Sports and athletics	(2.3)
4.	Sports and athletics	(2.3)	Self-educational activities	(2.0)
5.	Fine arts activities	(2.1)	Fine arts activities	(1.9)
6.	Hobby activities	(1.6)	Hobby activities	(1.9)

Table 187 compared vocational and academic graduates without regard to their attained level of formal education at the time of the survey. Since a much higher percentage of academic graduates than vocational graduates attended or completed college, it is reasonable to assume that amount of education influenced the differences shown in Table 187. A more equitable comparison is in order.

How do vocational and academic high school graduates with no college education compare in terms of the leisure activity index, and the mean frequency ratings of the individual activities that comprise the index? Table 188 provides the data for graduates from the same comprehensive schools.

The leisure activity indexes for the two types of graduates are not significantly different for any of the year of graduation groups. The conclusion is that the type of curriculum the graduate has followed in high school, i.e. academic or vocational, does not influence the range of his leisure activities as an adult.

When the mean frequency ratings of the individual leisure activities are compared, the conclusion is much the same, i.e. the type of high school curriculum followed does not significantly influence future adult leisure activities. The mean ratings are slightly higher for the academic graduates in some activities, but the differences are not statistically significant. It does appear, however, that vocational course graduates engage in home workshop activities more frequently than academic graduates — a hardly surprising fact.

Table 188. LEISURE ACTIVITY INDEXES AND MEAN FREQUENCY RATINGS OF LEISURE ACTIVITIES BY TYPE OF GRADUATE (Based on graduates from comprehensive schools only with no college level education)

	Types of Leisure Activities	TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
	Reading newspapers	1726	3.4	.80	790	3.5	.76
1	Reading non-fiction books	1689	2.0	.85	772	2.1	.86
	Reading general magazines	1711	2.6	.85	782	2.7	.82
	Reading trade books/periodicals	1700	2.3	.90	774	2.4	.94
2	Attending educational courses	1687	1.8	.89	771	1.8	.93
	Attending lectures, discussions	1697	1.5	.77	780	1.5	.77
	Engaging in craft hobbies	1708	1.9	.91	785	1.8	.89
3	Working in a home work shop	1700	2.2	.96	767	1.8	.91
	Collecting stamps, coins, etc.	1677	1.5	.84	789	1.5	.87
	Attending spectator sports	1697	2.3	.86	781	2.4	.84
4	Engaging in team sports	1707	2.0	.97	780	2.1	.96
	Engaging in individual sports	1706	2.7	.78	779	2.6	.84
	Attending plays, concerts, etc.	1690	1.4	.64	777	1.5	.72
5	Engaging in performing arts	1648	1.4	.73	776	1.5	.83
	Listening to music at home	1707	2.9	.90	784	3.0	.89
	Watching T.V. programs	1701	3.0	.90	771	3.0	.94
6	Entertaining or visiting friends	1708	2.8	.67	781	2.8	.71
	Going to movies	1713	2.4	.75	782	2.4	.75
LEISURE ACTIVITY MEASURE		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	312	53.3	8.1	172	54.5	8.4
	1958	534	54.8	8.5	267	54.2	8.6
	1962	776	54.6	9.1	357	54.9	8.9
	Combined	1625	54.4	8.8	796	54.6	8.7

* 1 = Almost never; 2 = Infrequently; 3 = Frequently; 4 = Almost always

THE GRADUATE'S ORGANIZATION AFFILIATIONS

Introduction

The graduates were asked to indicate their present membership status in the following kinds of community organizations:

1. Religious
2. Political
3. Service
4. Sports
5. Labor
6. Fraternal
7. Veterans
8. Business or trade
9. Cultural
10. Civic
11. Youth
12. Professional

The membership status categories represented different degrees of active participation. They were: (1) not a member, (2) inactive member, (3) active member, and (4) presently an officer. The ratings provided the basis for an organization affiliation index, which reflected degree of active participation in community organizations. The affiliation measure was obtained by multiplying the mean frequency rating of the graduate by 25. Each rating was given the value of numbers preceding the aforementioned answer categories. For a more complete description of the measure, see Chapter 3.

The rationale for the use of the measure was the reasoning that degree of organization affiliation reflected social interaction with different segments of the community. In a democratic society, such social interaction is desirable. It may be looked upon as a measure of the degree to which the individual is an influence in his community. Certainly, somewhere within the concept of education of the total person, there must be recognition of the dimension of organizational affiliation and leadership. Hence, one of the goals of education might be to instill a motivation and capability for active participation in recognized organizations in our society.

Analysis by Year of Graduation

How does the organization affiliation index change with increased age or years out of high school? Does the degree of active participation in community organizations increase as the graduate gets older and more established in his community? Table 189 presents a frequency, percentage and cumulative percentage distribution of the affiliation measure.

Table 189. ORGANIZATION AFFILIATION INDEX: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Organization Affiliation	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
C.I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
100	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0
93-99	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0
85-92	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0
78-84	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0	0	0.0	100.0
70-77	0	0.0	100.0	1	0.1	100.0	2	0.1	100.0	3	0.1	100.0
63-69	1	0.1	100.0	1	0.1	99.9	2	0.1	99.9	4	0.1	99.9
55-62	12	1.1	99.9	9	0.5	99.8	10	0.4	99.8	31	0.6	99.8
48-54	32	2.8	98.8	37	2.3	99.3	44	1.8	99.4	113	2.5	99.2
40-47	174	15.4	96.0	160	9.8	97.0	160	6.5	97.6	494	10.9	96.7
33-39	384	34.1	80.6	494	30.3	87.2	577	23.5	91.1	1460	32.0	85.8
25-32	525	46.5	46.5	928	56.9	56.9	1656	67.6	67.6	2449	53.8	53.8
Number	1128			1630			2451			4554		
Mean	33.90			32.24			31.06			33.08		
Median	33			31			29			31		
S.D.	6.67			6.11			5.84			5.98		

The mean values for 1962, 1958 and 1953 are respectively 31.1, 32.2 and 33.9, indicating a trend of increased orgainzation affiliation with more years out of school. This is as expected, and requires that the index be used to compare individuals or groups with like years out of high school.

Table 190 provides the mean ratings of affiliation with each type of organization. The upward pointing arrows represent consistently higher mean ratings for greater years out of school for the type of organizations so marked, i.e. religious, labor, fraternal and professional organizations. For all types of organizations, other than youth, athletic and cultural organizations, the 1953 graduates have a higher mean rating than the 1962 graduates.

Based upon mean ratings, the three types of organization with which graduates have the most active affiliation are: (1) religious, (2) labor, and (3) athletic organizations.

The mean ratings indicate something else about the vocational graduate; he is not a member of many organizations, and when he is, he is usually an inactive member. The percentages of non-membership and inactive membership reported below for all graduates combined shows his non-membership more clearly.

Type of Organization	Not a Member	Inactive
Religious	22.6 %	38.3 %
Political	82.2	13.6
Service	93.3	3.5
Athletic	73.0	7.3
Labor Union	68.6	10.6
Fraternal	89.1	4.9
Veterans	95.7	2.9
Business	86.4	5.8
Cultural	93.6	2.7
Civic	92.9	3.8
Youth	85.4	7.6
Professional	88.6	3.4

The vocational graduate does not conform to the stereotype "joiner" American. As shall be shown later, neither does the academic graduate. This may be because the survey covers the young adult years only. Organization affiliation status may change with the middle years.

Table 190. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY YEAR OF GRADUATION

Types of Organizations	YEAR OF GRADUATION											
	1953			1958			1962			Combined		
	N	M	S.D.	N	M	S.D.	N	M	S.D.	N	M	S.D.
▲ Religious	1108	2.4	.87	1576	2.2	.82	2350	2.1	.81	5053	2.2	.83
Political	1111	1.3	.62	1558	1.3	.56	2333	1.1	.41	5020	1.2	.52
Service	1104	1.2	.54	1553	1.1	.44	2319	1.1	.34	4994	1.1	.42
Athletic	1101	1.5	.86	1545	1.5	.86	2324	1.5	.83	4989	1.5	.85
▲ Labor union	1105	1.7	.91	1555	1.6	.86	2327	1.4	.76	5005	1.5	.84
▲ Fraternal	1105	1.3	.64	1554	1.2	.57	2320	1.1	.43	4997	1.2	.53
Veterans	1117	1.1	.38	1554	1.1	.30	2315	1.0	.24	5004	1.1	.30
Business or trade	1114	1.3	.68	1556	1.2	.61	2324	1.2	.51	5002	1.2	.58
Cultural	1106	1.1	.40	1558	1.1	.40	2324	1.1	.45	5006	1.1	.42
Civic	1102	1.2	.56	1553	1.1	.45	2311	1.1	.32	4983	1.1	.42
Youth	1107	1.2	.66	1554	1.2	.56	2314	1.3	.63	4992	1.2	.62
▲ Professional	1102	1.3	.70	1544	1.2	.61	2293	1.1	.51	4957	1.2	.59
ORGANIZATION AFFILIATION	1128	39.9	6.67	1630	32.2	6.11	2451	31.1	5.84	—	—	—

* 4 = Presently an officer; 3 = Active member; 2 = Inactive member; 1 = Not a member

▲ = Indicates direction of mean ratings with increased years out of school

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of the organization affiliation index? The lower section of Table 191 presents the data.

Table 191. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY TYPE OF SCHOOL

Types of Organizations		TYPE OF SCHOOL					
		Vocational			Comprehensive		
		N	M	S.D.	N	M	S.D.
Religious		2970	2.2	.83	2083	2.2	.83
Political		2944	1.2	.51	2076	1.2	.53
Service		2937	1.1	.40	2057	1.1	.45
Athlete		2939	1.5	.84	2050	1.5	.86
Labor union		2946	1.6	.85	2059	1.5	.81
Fraternal		2940	1.2	.54	2057	1.2	.51
Veterans		2944	1.1	.30	2060	1.1	.29
Business or trade		2938	1.2	.58	2064	1.2	.59
Cultural		2945	1.1	.40	2061	1.1	.45
Civic		2934	1.1	.40	2049	1.1	.45
Youth		2932	1.2	.62	2060	1.2	.62
Professional		2912	1.2	.58	2045	1.2	.60
ORGANIZATION AFFILIATION		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	669	33.5	6.36	429	34.6	7.08
	1958	921	32.2	5.90	709	32.3	6.37
	1962	1434	31.1	5.95	1017	30.9	5.67
	Combined	3069	32.0	6.10	2158	32.1	6.35

* 4 = Presently an officer; 3 = Active member; 2 = Inactive member; 1 = Not a member

Within each year of graduation group, there is no significant difference in the organization affiliation index between graduates of the two types of schools. The conclusion is that the type of school the vocational graduate has attended has no bearing on his future active participation in community organizations.

Are there any significant differences in the mean affiliation ratings given to the different types of organizations by the graduates of the two types of schools? The upper section of Table 191 shows the mean affiliation scores. There are no significant differences in any of the comparisons. The type of school attended by the graduate does not influence the type of organization he affiliates with after graduation.

Analysis by School Enrollment

How do vocational graduates from small, medium, and large enrollment schools, as defined in this study, differ in terms of the organization affiliation index? Is there a significant trend? The lower section of Table 192 presents the data.

Although the affiliation index increases slightly with increased enrollment for each year of graduation group, the trends are not significant. The conclusion is the school enrollment is not a variable influencing the graduates' future affiliation with community organizations. The slight tendency for a higher affiliation index for large enrollment schools can be attributed to the location of such schools in major metropolitan areas where there is a greater representation of the types of organization listed. For example, more of the trades in metropolitan areas are labor union affiliated than in the smaller communities.

Are there any differences in the mean ratings of affiliation with individual types of organizations in terms of school enrollment? The mean ratings are shown in the upper section of Table 192. There is no trend of mean ratings by enrollment for any of the organization categories. The conclusion is that the enrollment of the graduate's former school is unrelated to his future affiliation with the types of organizations covered by the survey.

Table 192. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY SCHOOL ENROLLMENT

Types of Organizations		SCHOOL ENROLLMENT								
		< 500			500-1500			>1500		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Religious		1685	2.2	.84	1874	2.2	.82	1494	2.2	.84
Political		1666	1.2	.53	1864	1.2	.49	1490	1.2	.54
Service		1667	1.1	.39	1853	1.1	.44	1474	1.1	.43
Athlete		1671	1.5	.84	1844	1.5	.86	1474	1.5	.85
Labor union		1666	1.5	.82	1854	1.5	.84	1485	1.6	.85
Fraternal		1667	1.2	.53	1856	1.2	.51	1474	1.2	.56
Veterans		1666	1.1	.31	1858	1.1	.30	1480	1.1	.28
Business or trade		1668	1.2	.56	1851	1.2	.58	1483	1.2	.61
Cultural		1673	1.1	.39	1853	1.1	.43	1480	1.1	.45
Civic		1670	1.1	.44	1843	1.1	.41	1470	1.1	.43
Youth		1665	1.2	.59	1852	1.2	.63	1475	1.2	.63
Professional		1652	1.2	.53	1835	1.2	.61	1470	1.2	.61
ORGANIZATION AFFILIATION		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	407	33.4	6.53	428	33.6	6.49	293	35.0	6.97
	1958	533	31.7	5.67	642	32.3	6.18	455	32.8	6.45
	1962	777	30.9	5.94	906	31.0	5.61	768	31.3	5.99
	Combined	1722	31.8	6.08	1987	32.0	6.08	1518	32.4	6.48

* 4 = Presently an officer; 3 = Active member; 2 = Inactive member; 1 = Not a member

Analysis by Race of Graduate

Do Negro and white graduates differ in terms of the organization affiliation index? The lower section of Table 193 presents the data.

Within each of the year of graduation groups, the Negro graduates have a slightly higher organization affiliation index than the white graduates. The consistency of the differences suggests that Negro graduates tend to become members of, and participate more actively in, organizations than do white

Table 193. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY RACE OF GRADUATE

Types of Organizations		RACE OF GRADUATE								
		White			Negro			Other		
		N	M	S.D.	N	M	S.D.	N	M	S.D.
Religious		4681	2.2	.83	328	2.4	.84	19	1.7	.73
Political		4660	1.2	.51	316	1.3	.63	19	1.2	.52
Service		4638	1.1	.42	311	1.1	.44	19	1.1	.45
Athlete		4636	1.5	.83	310	1.8	.97	18	1.5	.83
Labor union		4648	1.5	.84	312	1.5	.84	19	1.4	.67
Fraternal		4641	1.2	.53	311	1.2	.55	19	1.0	.22
Veterans		4647	1.1	.28	312	1.1	.41	19	1.1	.22
Business or trade		4646	1.2	.58	311	1.3	.64	19	1.4	.67
Cultural		4649	1.1	.40	312	1.3	.68	19	1.0	.22
Civic		4632	1.1	.41	306	1.3	.62	19	1.1	.45
Youth		4634	1.2	.60	313	1.5	.80	19	1.3	.55
Professional		4606	1.2	.58	305	1.3	.69	19	1.3	.80
ORGANIZATION AFFILIATION		N	M	S.D.	N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1073	33.8	6.56	42	37.1	8.23	3	35.0	4.24
	1958	1475	32.3	5.91	110	34.2	8.00	5	27.8	2.99
	1962	2192	31.0	5.64	183	34.0	7.24	10	32.4	5.85
	Combined	4757	32.0	6.04	336	34.5	7.68	18	31.6	6.55

* 4 = Presently an officer; 3 = Active member; 2 = Inactive member; 1 = Not a member

graduates. It should be kept in mind, however, that the differences are not great. Furthermore, neither Negro nor white graduates are strong joiners. They are overwhelmingly non-members.

Are there any differences in the mean affiliation ratings between Negro and white graduates? The upper section of the table shows the mean ratings. In no case are the mean affiliation ratings of white graduates greater than comparable ratings by Negro graduates. The Negro graduate is more frequently a member of the following types of organizations: athletic, youth, religious, cultural and civic organizations.

In rank order, the top three types of organizations in terms of mean affiliation ratings are the same for both Negro and white graduates: (1) religious, (2) athletic, and (3) labor union. The differences are not so much in kinds of organizations both races become members of, but in the percentages that become members and the degree of active involvement.

Analysis of Type of Graduate

How do vocational and academic graduates compare in terms of the organization affiliation index? Do the academic graduates, because of their broader education, become actively involved in community and other organizations to a greater degree than do vocational graduates? The lower section of Table 194 presents the data.

Within each year of graduation group, the organization affiliation index is slightly greater for academic graduates than for vocational graduates. While the differences are not significant, their consistency suggests academic graduates are slightly more involved in community organizations than vocational graduates.

How do the two types of graduates compare in terms of the mean affiliation ratings? The upper section of Table 194 presents the data. The differences are negligible, albeit consistently in favor of the academic graduates, with the exception of veterans' organizations and labor unions, in which vocational graduates are more active. Academic graduates are somewhat more active in professional organizations, e.g. 17 percent of the academic graduates reported they were officers in such organizations, whereas, only 7.4 percent of vocational graduates reported officer status.

In general, then, there are slight but consistent differences that indicate academic graduates are more actively involved in community and other organizations. What happens to those differences when vocational and academic graduates, from comprehensive schools only, who have no college education are compared? Table 195 provides the data.

Table 194. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY TYPE OF GRADUATE

(Based on all graduates regardless of formal educational level attained)

Types of Organizations		TYPE OF GRADUATE					
		Vocational			Academic		
		N	M	S.D.	N	M	S.D.
Religious		5053	2.2	.83	1739	2.3	.85
Political		5020	1.2	.52	1734	1.3	.62
Service		4994	1.1	.42	1721	1.2	.55
Athlete		4989	1.5	.85	1715	1.6	.89
Labor union		5005	1.5	.84	1723	1.3	.67
Fraternal		4997	1.2	.53	1728	1.3	.70
Veterans		5004	1.1	.30	1728	1.0	.28
Business or trade		5002	1.2	.58	1722	1.3	.64
Cultural		5006	1.1	.42	1721	1.2	.60
Civic		4983	1.1	.42	1721	1.2	.50
Youth		4992	1.2	.62	1720	1.3	.73
Professional		4957	1.2	.59	1706	1.4	.79
ORGANIZATION AFFILIATION		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	1128	33.9	6.66	423	36.2	7.85
	1958	1630	32.2	6.11	562	33.6	6.56
	1962	2454	31.1	5.84	794	32.3	6.2
	Combined	5227	32.0	6.21	1779	33.6	6.9

* 4 = Presently; 3 = Active member; 2 = Inactive member;
1 = Not a member

Within each year of graduation group, the organization affiliation index shows no significant difference between comprehensive school vocational and academic graduates who have had no college. It is noteworthy that the differences in favor of the academic graduates found when college educated graduates were included in the comparison (Table 194) have now virtually disappeared.

Table 195. ORGANIZATION AFFILIATION INDEXES AND MEAN FREQUENCY RATINGS OF ORGANIZATION AFFILIATION BY TYPE OF GRADUATE

(Based on graduates from comprehensive schools only with no college level education)

Types of Organizations	TYPE OF GRADUATE					
	Vocational			Academic		
	N	M	S.D.	N	M	S.D.
Religious	1697	2.2	.81	779	2.2	.83
Political	1694	1.2	.51	777	1.2	.53
Service	1679	1.1	.40	776	1.2	.51
Athletic	1672	1.5	.84	769	1.5	.88
Labor union	1680	1.5	.83	772	1.4	.80
Fraternal	1678	1.1	.47	779	1.2	.54
Veterans	1679	1.1	.30	777	1.1	.30
Business or trade	1683	1.2	.57	776	1.2	.59
Cultural	1685	1.1	.41	776	1.1	.51
Civic	1673	1.1	.41	772	1.1	.44
Youth	1684	1.2	.60	771	1.3	.67
Professional	1672	1.2	.53	769	1.2	.57

ORGANIZATION AFFILIATION		N	M	S.D.	N	M	S.D.
Year of Graduation	1953	326	34.1	6.6	173	34.8	6.9
	1958	584	32.0	6.1	269	32.7	6.2
	1962	850	30.7	5.4	364	31.0	5.4
	Combined	1762	31.7	6.0	806	32.3	6.2

* 4 = Presently an officer; 3 = Active member; 2 = Inactive member; 1 = Not a member

The differences between the mean ratings shown at the top of Table 195 also fail to be significant. The conclusion is that there is no difference in community organization affiliation between vocational and academic course graduates with no college level education.

12

MISCELLANEOUS FINDINGS ABOUT THE GRADUATES

☐ Employment Mobility Analysis 1

☐ Ordinal Day of Return Analysis 11

☐ Military Service Analysis 17

CHAPTER 12 SUMMARY

Analysis of Job Mobility

1. Job mobility measure. The number of moves vocational graduates made to other cities for employment was multiplied by the sum of weights assigned to distances moved to provide a measure of employment mobility.

2. Year of graduation. The mean number of moves to other cities for graduates of 1953, 1958, and 1962 was .4, .3, and .2--indicating very little mobility of vocational graduates. The percentage that moved to another city to get their first job is negligible. Of those who do move to other cities, the majority of cases are for distances less than 300 miles.

3. Type of school. There is no significant difference between graduates of vocational and comprehensive schools in terms of job mobility as herein defined.

4. School enrollment. There is no significant difference between graduates of small, medium, and large enrollment schools in terms of job mobility as herein defined.

5. Race of graduates. No conclusion can be drawn about job mobility differences between Negro and white graduates on the basis of the uncorrected sample. See text for details.

Ordinal Day of Return Analysis

6. Ordinal day of return. This has reference to how many days it took for the graduate's questionnaire to be returned. It reflects promptness and cooperation in returning the questionnaire.

7. Year of graduation. There is no significant difference between the graduates of 1953, 1958, and 1962 in terms of mean number of days required to return the questionnaire.

8. Type of school. Vocational school graduates were slightly quicker to return questionnaires than comprehensive school graduates.

9. School enrollment. There is no significant difference between graduates of small, medium, and large enrollment schools in terms of promptness of questionnaire return.

10. Race of graduates. Negro graduates were slightly less prompt in returning the questionnaire than white graduates.

11. Academic versus vocational graduates. Academic graduates were somewhat more prompt in returning questionnaires than vocational graduates.

(Continued in Appendix B)

ANALYSIS OF JOB MOBILITY

Introduction

To what extent do vocational graduates move to other cities to find employment or to improve their employment status? What are the distances moved?

A measure was developed to reflect both aspects of mobility, i.e. number of new city moves and distances moved. The graduate's score on the job mobility measure, was obtained by multiplying the sum of weights, ranging from 2 to 7, assigned to distances moved from 50 to more than 1200 miles by the number of moves made. The measure is for comparative purposes only. It cannot be interpreted directly in terms of number of moves or distances moved. The higher the score, the greater the graduate's job mobility which is a product of number of moves and weights assigned to distances moved. See Chapter 3 for a more complete definition of the measure.

In Chapter 3, it was shown that the job mobility measure was unrelated to any of the other occupational measures, i.e. employment security, related placement, job relatedness, job satisfaction, and earnings progression. It was concluded that those who moved to other cities to take jobs fared neither better or worse in terms of the occupational measures than those who stayed in the area in which they went to school. Individuals may, of course, be exceptions to the general rule. The finding is particularly relevant to the widespread idea that efforts should be made to stimulate employment mobility, to encourage people to go where the jobs are. In terms of the occupational measures used in this study, there is no evidence that those who go are better off than those who stay. It should be kept in mind, however, that these findings apply to vocational graduates, not to the general labor market as such.

The present section continues the analysis of the mobility measure in terms of the basic study variables.

Analysis by Year of Graduation

Within each year of graduation group, what is the mean and median number of new city moves reported by graduates? What is the frequency distribution for the number of moves reported? Table 196 provides the data. A later table will provide comparable data in terms of the job mobility measure described earlier.

Table 196. NUMBER OF MOVES TO OTHER CITIES: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

	YEAR OF GRADUATION								
Number of New City Job Moves	1953			1958			1962		
	N	%	C%	N	M	C%	N	M	C%
6	1	0.1	100.0	0	-	-	0	-	-
5	3	0.3	99.9	0	-	-	0	-	-
4	7	0.7	99.6	5	0.4	100.0	2	0.1	100.0
3	25	2.4	98.9	23	1.7	99.6	12	0.7	99.9
2	71	6.8	96.5	66	4.7	98.0	52	3.1	99.2
1	174	16.8	89.7	219	15.7	93.3	161	9.7	96.0
0	756	72.9	72.9	1080	77.5	77.5	1439	86.4	86.4
Number of Cases	1037			1393			1666		
Mean	0.42			0.32			0.18		
Median	0.0			0.0			0.0		
S. D.	0.83			0.67			0.52		

The mean number of jobs that involved changes in residence to other cities were .42, .32 and .18 for the graduates of 1953, 1958 and 1962 respectively. The median number of such moves for all three year of graduation groups was zero. The data in Table 196 indicate the following: (1) The great majority of vocational graduates find all their jobs in the city where they went to school. Approximately 73, 77 and 36 percent of the 1953, 1958 and 1962 graduates respectively have never moved to another city for employment purposes.

(2) With increased years out of school, the number of such moves reported increases. However, the increase is negatively accelerated. There is no evidence of a relatively high mobility period after so many years out of school.

Less than three percent of the graduates reported that their first full-time job after graduation involved a move to another city. This is understandable in view of the age of high school graduates. Unless they have friends or relatives in other cities with who they can stay, it is very unlikely that they will make such moves at their age. How does this agree with the opinion held by some vocational educators that schools should not necessarily confine their trade training to local employment opportunities, that they should think more broadly in terms of state, regional or even national employment opportunities? The mobility findings offer little support for such views. First, there is very little mobility in the sense that the term is herein used. Second, the evidence indicates that those who have made such moves are no better off in terms of working in the trades studied or highly related trades than those who have made no such moves.

Table 197 provides similar data in terms of the job mobility measure which takes into account both number of moves to other cities and the distances moved.

The mean values of .45, 1.0 and 2.06 for 1962, 1958 and 1953 graduates respectively reflect what was established in Table 196. There is relatively little job mobility, as defined, among vocational graduates. It is a relatively infrequent factor among recent graduates, but does increase with increased years out of school. Even at eleven years out of school, however, the great majority of graduates have yet to make a move to another city to obtain employment.

When the vocational graduates do move to other cities, what distances do they go? Table 198 shows a distribution of distances moved by the three year of graduation groups.

Within each year of graduation group, the majority of the moves has been for distances less than 300 miles. The median distance moved is greater for

Table 197. JOB MOBILITY INDEX: FREQUENCY DISTRIBUTIONS FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

	Year of Graduation											
Employment	1953			1958			1962			Combined		
Mobility	N	%	C%	N	%	C%	N	%	C%	N	%	C%
> 100	2	0.2	100.0	0	0.0	100.0	0	0.0	100.0	2	0.1	100.0
90- 99	0	0.0	99.8	0	0.0	100.0	0	0.0	100.0	0	0.0	99.9
80- 89	1	0.1	99.7	0	0.0	100.0	0	0.0	100.0	1	0.1	99.9
70- 79	2	0.2	99.6	0	0.0	100.0	0	0.0	100.0	2	0.1	99.9
60- 69	5	0.5	99.4	3	0.2	99.8	1	0.0	100.0	9	0.2	99.8
50- 59	3	0.3	98.9	3	0.2	99.8	0	0.0	99.9	6	0.2	99.6
40- 49	2	0.2	98.6	5	0.4	99.6	3	0.1	99.9	10	0.3	99.5
30- 39	8	0.8	98.4	5	0.4	99.2	1	0.1	99.8	14	0.4	99.2
20- 29	18	1.9	97.6	17	1.3	98.8	13	0.8	99.7	48	1.2	98.8
10- 19	34	3.5	95.7	30	2.3	97.5	25	1.6	98.9	89	2.2	97.6
0- 9	884	92.2	92.2	1259	95.2	95.2	1562	97.3	97.3	3717	95.4	95.4
Number	959			1322			1605			3898		
Mean	2.06			1.00			0.45			1.03		
Median	0.0			0.0			0.0			0.0		
S. D.	10.45			5.45			3.22			6.45		

the 1953 graduates than for 1958 and 1962 graduates, indicating older graduates move somewhat greater distances. However, what is impressive is the relatively short distances moved. The implication for vocational education is clear. The labor market for which a school trains persons in the trade is relatively small in terms of geographic area. The great majority never obtain employment outside the city in which they received their high school education. Those that do, do not go great distances from that city.

It should be pointed out that these conclusions are tentative depending upon the results of correcting the sample for the address unknown cases. It is very likely that there is substantially greater mobility, as defined, among

Table 198. DISTANCES MOVED FOR EMPLOYMENT: FREQUENCY DISTRIBUTION FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

Distances Moved For Jobs (miles)	YEAR OF GRADUATION								
	1953			1958			1962		
	N	%	C%	N	%	C%	N	%	C%
> 1200	45	11.4	100.0	34	9.1	100.0	16	6.5	100.0
601 - 1200	32	8.1	88.6	28	7.5	90.9	16	6.5	93.5
301 - 600	55	13.9	80.5	50	13.4	83.4	34	13.8	87.0
151 - 300	74	18.7	66.6	55	14.7	70.0	44	17.9	73.2
51 - 150	96	24.2	47.9	94	25.1	55.3	58	23.6	55.3
< 50	94	23.7	23.7	113	30.2	30.2	78	31.7	31.7
NUMBER MOVES	396	—	—	374	—	—	246	—	—

the address unknown cases. In metropolitan areas, it is quite possible that graduates have moved to other parts of a city without leaving a forwarding address. In some of the smaller towns, however, the inability to locate the graduate through normal postal channels would seem to indicate a move to another city. On the basis of such reasoning, the mobility picture presented can be expected to change with sample correction.

Analysis by Type of School

How do vocational graduates of comprehensive and vocational schools compare in terms of job mobility? Table 199 presents the data.

Within each of the year of graduation groups, the comprehensive school graduates have a slightly higher mean job mobility score than the vocational graduates. The individual differences, however, are neither substantial nor statistically significant. The conclusion is that job mobility is unrelated to the type of high school attended.

Table 199. JOB MOBILITY INDEX: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL VOCATIONAL GRADUATES

Year of Graduation	Type of School	Job Mobility		
		N	M	S.D.
1953	Vocational	600	1.6	9.6
	Comprehensive	359	2.8	11.6
1958	Vocational	773	0.9	5.1
	Comprehensive	555	1.2	5.8
1962	Vocational	958	0.4	3.1
	Comprehensive	647	0.6	3.4
Combined	Vocational	2341	0.8	6.0
	Comprehensive	1558	1.3	7.0

Analysis by School Enrollment

How do graduates of small, medium and large enrollment schools, as defined in this study, compare in terms of the job mobility measure? Table 200 provides the data.

Within and across the year of graduation groups, there is no consistent pattern of the mean mobility scores that suggests job mobility is related to the enrollment of the high school attended. It must be concluded that job mobility and school enrollment are unrelated variables.

Analysis by Race of Graduates

How do white and Negro vocational graduates compare in terms of the job mobility measure? Table 201 provides the data.

Table 200. JOB MOBILITY INDEX: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL VOCATIONAL GRADUATES

Year of Graduation	School Enrollment	Job Mobility		
		N	M	S.D.
1953	< 500	342	2.0	12.0
	500 - 1500	351	2.4	10.3
	> 1500	266	1.7	8.1
1958	< 500	437	1.1	5.4
	500 - 1500	516	1.0	5.5
	> 1500	370	0.9	5.4
1962	< 500	547	0.6	3.9
	500 - 1500	562	0.4	2.4
	> 1500	496	0.4	3.2
Combined	< 500	1328	1.1	7.3
	500 - 1500	1438	1.1	6.3
	> 1500	1133	0.9	5.5

Table 201. JOB MOBILITY INDEX: COMPARISON BY RACE OF VOCATIONAL GRADUATES

Year of Graduation	Race of Graduate	Job Mobility		
		N	M	S.D.
1953	White	914	2.2	10.2
	Negro	35	0.0	0.0
	Other	3	0.0	0.0
1958	White	1217	1.1	5.7
	Negro	77	0.3	1.6
	Other	4	0.0	0.0
1962	White	1443	0.5	3.3
	Negro	119	0.3	3.3
	Other	4	0.0	0.0
Combined	White	3585	1.1	6.7
	Negro	232	0.3	2.5
	Other	11	0.0	0.0

Within each year of graduation group, the white graduates have a greater mean job mobility than the Negro graduates. The mobility difference between the two races increases with increased years out of school. Despite these differences, it cannot be concluded that the Negro has less job mobility, as defined, than the white graduate. The data in Table 201 is based upon those who were locatable and provided a questionnaire. It is known, however, that a substantially greater percentage of the Negro graduates were address unknown cases despite intensified efforts to locate them in the city in which they went to school. Thus, it may well be that, if data were available on the address unknown Negro graduates, the job mobility of the Negro graduates would be greater than that of the whites. The correction of the sample for address unknown and non-respondent cases, discussed in the Appendix, does not resolve the analysis. Correction for race of graduates could not be undertaken because the percentage of white and Negro graduates in the solicited sample of over ten thousand graduates was unknown. Inferences about the relative returns of white and Negro graduates could only be made by comparing the return performance of known all-Negro schools with that of schools known to have all or virtually all white graduates. The schools could not or would not identify graduates in terms of race.

Under the circumstances described, no conclusion can be reached about the relative job mobility of white and Negro graduates on the basis of data herein presented.

Analysis by Type of Graduate

How do academic and vocational course graduates, who have had no college education, compare in terms of the job mobility measure? Table 202 provides the data.

Within each year of graduation group, the academic graduates have a higher mean mobility score than the vocational graduates. Only the difference generated by the 1953 graduates, however, is significant. Thus, although both types of graduates exhibit relatively low job mobility, the academic graduates have

Table 202. JOB MOBILITY INDEX: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES WITH NO COLLEGE EDUCATION

Year of Graduation	Type of Graduate	Job Mobility		
		N	M	S.D.
1953	Vocational	771	1.3	6.7
	Academic	143	5.5	30.0
1958	Vocational	1112	0.9	5.1
	Academic	212	1.6	5.2
1962	Vocational	1449	0.5	3.3
	Academic	209	0.9	4.7
Combined	Vocational	3344	0.8	4.9
	Academic	564	2.1	16.0

somewhat greater job mobility than the vocational graduates. Why this should be so, is a matter for further study. One plausible hypothesis is that the vocational graduates who enter the trade studied or highly related trades are less mobile because of a relatively greater association with labor organizations and the seniority benefits that go with such associations. It should be recalled that vocational graduates had greater employment security as a group than academic graduates. The unemployment stimulus to job mobility would therefore be less.

ORDINAL DAY OF RETURN ANALYSIS

Introduction

Ordinal day of questionnaire return refers to the number of days between the initial contact of the graduate and when a questionnaire was received from him. Thus, it is a measure of the graduates' promptness and cooperation in returning the questionnaire.

The primary purpose of the measure was to determine whether there were relationships between promptness of return and the occupational and non-occupational measures. Such relationships would imply that those who did not return a questionnaire would perform differently on the occupational and non-occupational measures, if one is willing to assume that the non-respondents to the seventh and last contact are on a continuum with the non-respondents to earlier contacts who were prodded into a questionnaire return. It was shown in Chapter 3 that the ordinal day of return measure correlated significantly with only two occupational measures, job relatedness and employment security. One would predict, therefore, that non-respondents would perform differently on these two measures than the respondents. Similarly, one would predict that there would be no difference between respondents and non-respondents converted to respondents by intensified efforts on those measures that are unrelated to ordinal day of return. The outcome has considerable significance for survey methodology where correction for non-respondents must be considered.

Quite apart from such methodological considerations, the measure is of interest as a reflection of possible willingness to cooperate. This section is concerned with the analysis of the ordinal day of return measure in terms of the basic study variables.

Analysis by Year of Graduation

How do the graduates of 1953, 1958 and 1962 compare in terms of the ordinal day of return measure? Table 203 presents the data.

Table 203. ORDINAL DAY OF QUESTIONNAIRE RETURN: FREQUENCY DISTRIBUTION FOR VOCATIONAL GRADUATES BY YEAR OF GRADUATION

	YEAR OF GRADUATION											
Ordinal Day	1953			1958			1962			Combined		
C. I.	N	%	C%	N	%	C%	N	%	C%	N	%	C%
91-100	9	0.8	100.0	14	0.9	100.0	14	6.6	100.0	37	0.7	100.0
81- 90	4	0.4	99.2	7	0.4	99.1	17	0.7	99.4	28	0.6	99.3
71- 80	14	1.2	98.8	28	1.7	98.7	39	1.6	98.7	81	1.6	98.7
61- 70	34	3.0	97.6	88	5.5	97.0	154	6.4	97.1	280	5.4	97.2
51- 60	52	4.7	94.6	58	3.6	91.5	107	4.4	90.7	219	4.3	91.8
41- 50	113	10.1	89.9	175	10.9	87.9	246	10.2	86.3	537	10.4	87.5
31- 40	91	8.1	79.8	133	8.3	77.0	165	6.8	76.1	390	7.5	77.1
21- 30	139	12.4	71.7	154	9.5	68.7	292	12.1	69.3	591	11.4	69.6
11- 20	286	25.5	59.3	363	22.6	59.2	538	22.2	57.2	1188	23.0	58.2
1- 10	379	33.8	33.8	589	36.6	36.6	848	35.0	35.0	1818	35.2	35.2
Number	1121			1609			2420			5169		
Mean	23.44			24.28			24.75			24.37		
Median	15			15			15			15		
S. D.	19.08			20.52			20.66			20.30		

The mean ordinal day of return for 1953, 1958 and 1962 graduates is 23.44, 24.28 and 24.75. The differences are negligible. The promptness of return is apparently unrelated to years since graduation from high school. Graduates of more than ten years ago were just as prompt with their returns as were graduates of two years before the survey was undertaken. In Chapter 2, it was reported that the percentage of questionnaires returned, based on locatable graduates, was 59.7, 65.1 and 71.4 percent for the graduates of 1953, 1958 and 1962 respectively, indicating a decreasing rate of return with increased years out of school. The lack of such a relation with the ordinal day of return measure indicates ordinal day of return and rate of return are unrelated.

Analysis by Type of School

How do the vocational graduates of comprehensive and vocational schools compare in terms of the number of days required to return the questionnaire? Table 204 provides the data.

Table 204. ORDINAL DAY OF QUESTIONNAIRE RETURN: COMPARISON OF VOCATIONAL AND COMPREHENSIVE SCHOOL VOCATIONAL GRADUATES

Year of Graduation	Type of School	Ordinal Day of Return		
		N	M	S.D.
1953	Vocational	687	22.5	18.4
	Comprehensive	434	24.9	20.1
1958	Vocational	912	22.8	19.8
	Comprehensive	698	26.2	21.3
1962	Vocational	1413	23.9	20.5
	Comprehensive	1007	26.0	20.9
Combined	Vocational	3027	23.3	19.8
	Comprehensive	2143	25.9	20.9

Within each year of graduation group, the mean ordinal day of return is slightly less for vocational school than comprehensive school graduates. While not substantial, the consistency of the difference suggests those from vocational schools were quicker to respond with completed questionnaires. Shall this be interpreted as greater willingness to cooperate?

Analysis by School Enrollment

How do the vocational graduates of small, medium and large enrollment schools, as defined in this study, compare in terms of the number of days required to return the questionnaire? Table 205 provides the data.

Table 205. ORDINAL DAY OF QUESTIONNAIRE RETURN: COMPARISON OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOL VOCATIONAL GRADUATES

Year of Graduation	School Enrollment	Ordinal Day of Return		
		N	M	S.D.
1953	< 500	416	22.0	17.7
	500 - 1500	399	23.1	19.8
	> 1500	306	25.9	19.6
1958	< 500	543	21.7	19.1
	500 - 1500	604	25.8	21.2
	> 1500.	463	25.3	20.9
1962	< 500	783	24.3	20.8
	500 - 1500	855	25.1	21.0
	> 1500	782	24.8	20.3
Combined	< 500	1747	22.9	19.6
	500 - 1500	1869	25.0	20.9
	> 1500	1554	25.2	20.4

No consistent trend relating ordinal day of return to school enrollment is revealed in the data. Individual differences between enrollment categories are not significant. The conclusion is that the promptness with which graduates returned questionnaires is unrelated to the enrollment of the school from which they came. If promptness of return is interpreted as an indicator of willingness to cooperate, it must be concluded that such willingness is also unrelated to school enrollment.

Analysis by Race of Graduate

How do white and Negro graduates compare in terms of number of days required to return the questionnaire? Table 206 provides the data.

Table 206. ORDINAL DAY OF QUESTIONNAIRE RETURN: COMPARISON BY RACE OF VOCATIONAL GRADUATES

Year of Graduation	Race of Graduate	Ordinal Day of Return		
		N	M	S.D
1953	White	1067	23.4	19.2
	Negro	42	25.8	17.0
	Other	3	14.0	5.4
1958	White	1456	23.6	20.0
	Negro	110	31.4	24.2
	Other	6	20.8	12.3
1962	White	2159	24.6	20.5
	Negro	186	26.3	22.1
	Other	10	19.8	16.1
Combined	White	4700	24.0	20.1
	Negro	339	27.9	22.4
	Other	19	19.2	13.9

Within each year of graduation group, the mean ordinal day of return for Negro graduates is slightly higher than for white graduates. The difference for the 1958 graduates is about a week. While the differences are not statistically significant, their consistent direction suggest Negro graduates are slightly slower to respond with questionnaires than white graduates.

Analysis by Type of Graduate

How do vocational and academic graduates compare in terms of number of days required to return the questionnaire? Table 207 provides the data.

Table 207. ORDINAL DAY OF QUESTIONNAIRE RETURN: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

Year of Graduation	Type of Graduate	Ordinal Day of Return		
		N	M	S.D.
1953	Vocational	434	24.9	20.1
	Academic	423	24.5	19.0
1958	Vocational	698	26.2	21.3
	Academic	561	23.8	19.1
1962	Vocational	1007	26.0	20.9
	Academic	793	23.7	19.4
Combined	Vocational	3027	23.3	19.8
	Academic	1777	23.9	19.2

Within each year of graduation group, the academic graduates took slightly less, although not significantly less, time to return their questionnaires. The small differences do not warrant any interpretation about the relative willingness to cooperate between the two types of graduates.

MILITARY SERVICE AMONG GRADUATES

Introduction

The military service data obtained from the graduates was primarily for the purpose of determining their employable time in the period beginning with graduation and ending with June, 1964, the close of the period surveyed. It may be a matter of interest to some to know whether the percentage of graduates who claimed military service is related to the basic study variables.

Analysis by Year of Graduation

Does the percentage of graduates claiming military service differ for the three year of graduation groups? Table 208 provides the data.

Table 208. MILITARY SERVICE CLAIMED: COMPARISON OF VOCATIONAL GRADUATES BY YEAR OF GRADUATION

CLAIMED MILITARY SERVICE							
YEAR OF GRADUATION							
1953		1958		1962		Combined	
N	%	N	%	N	%	N	%
817	70.2	986	59.5	873	35.1	2685	50.4

The percentage of 1953, 1958 and 1962 graduates who reported military service was 70.2, 59.5 and 35.1 respectively. On the assumption that most graduates that enter the services do so within three years after graduation, the data suggest that fewer vocational graduates are entering the services in recent years.

Analysis by Type of School

How do vocational graduates from vocational and comprehensive schools compare in terms of percentage claiming military service? Table 209 provides the data.

Table 209. MILITARY SERVICE CLAIMED: COMPARISON OF VOCATIONAL GRADUATES FROM VOCATIONAL AND COMPREHENSIVE SCHOOLS

CLAIMED MILITARY SERVICE			
TYPE OF SCHOOL			
Vocational		Comprehensive	
N	%	N	%
1605	51.4	1080	49.0

The percentage is 51.4 for vocational school graduates and 49.0 for comprehensive school graduates. The conclusion is there is no difference between the graduates of the two types of schools in terms of military service.

Analysis by Enrollment

How do the graduates of small, medium and large enrollment schools, as defined in this study, compare in percentage claiming military service? Table 210 provides the data.

Table 210. MILITARY SERVICE CLAIMED: COMPARISON OF VOCATIONAL GRADUATES OF SMALL, MEDIUM AND LARGE ENROLLMENT SCHOOLS

CLAIMED MILITARY SERVICE					
SCHOOL ENROLLMENT					
< 500		500 - 1500		> 1500	
N	%	N	%	N	%
966	55.0	967	48.0	752	48.4

There is no consistent trend between school enrollment and percentage of graduates claiming service, although a greater percentage of small enrollment school graduates claim military service. Since the graduates of small enrollment schools had no more difficulty in finding jobs than those of medium or large enrollment schools, (Chapter 5) the greater percentage claiming military service cannot be related to employment difficulties in small enrollment school communities.

Analysis by Race of Graduate

How do white and Negro graduates compare in terms of percentage that claim military service? Table 211 presents the data.

Table 211. MILITARY SERVICE CLAIMED: COMPARISON BY RACE OF GRADUATE

CLAIMED MILITARY SERVICE					
RACE OF GRADUATE					
White		Negro		Other	
N	%	N	%	N	%
2439	50.3	145	42.2	8	42.1

A smaller percentage of Negro graduates claim military service than white graduates. The difference of eight percent is significant. In the absence of study data that might explain the difference, no hypotheses are offered.

Analysis by Type of Graduate

How do academic and vocational course graduates from the same schools compare in terms of percentage claiming military service? Table 212 presents the data.

Table 212. MILITARY SERVICE CLAIMED: COMPARISON OF VOCATIONAL AND ACADEMIC GRADUATES

CLAIMED MILITARY SERVICE			
TYPE OF GRADUATE			
Vocational		Academic	
N	%	N	%
1080	49.0	763	42.9

Forty-nine percent of the vocational graduate from comprehensive schools claim military service versus forty-three percent of the academic graduates. One factor accounting for the difference is deferment of military service for reason of college attendance among the 1962 and 1958 graduates.

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APPENDIX

A. Schools Surveyed by Study 1
B. Chapter Summaries Continued 5
C. Correction of Study Sample 15

SCHOOLS SURVEYED BY STUDY*

I. NORTHEAST

1. Westbrook High School
   Westbrook, Maine

2. J. M. Wright Reg. Vo-Tech School
   Stamford, Connecticut

3. Oliver Wolcott Reg. Vo-Tech School
   Torrington, Connecticut

4. Diman Vocational High School
   Fall River, Massachusetts

5. Haverhill Trade High School
   Haverhill, Massachusetts

6. Quincy Trade High School
   Quincy, Massachusetts

7. Boston Trade High School
   Roxbury, Massachusetts

8. Cole Trade High School
   Southbridge, Massachusetts

9. Waltham Vocational High School
   Waltham, Massachusetts

10. Pawtucket Vocational High School
    Pawtucket, Rhode Island

11. St. Johnsbury Trade School
    St. Johnsbury, Vermont

II. MIDEAST

12. William Jason Comprehensive High School
    Georgetown, Delaware

13. Bladensburg Senior High School
    Bladensburg, Maryland

14. Fairmont Heights Senior High School
    Fairmont Heights, Maryland

15. Philip Schuyler High School
    Albany, New York

16. Sewanhaka High School
    Floral Park, New York

17. Linton High School
    Schenectady, New York

18. Abington Senior High School
    Abington, Pennsylvania

19. Eddystone Senior High School
    Eddystone, Pennsylvania

20. Central Dauphin High School
    Harrisburg, Pennsylvania

21. Hazleton Senior High School
    Hazleton, Pennsylvania

22. Greater Johnstown Joint High School
    Johnstown, Pennsylvania

23. Tyrone Junior-Senior High School
    Tyrone, Pennsylvania

24. William Penn Senior High School
    York, Pennsylvania

25. Chamberlain Vocational High School
    Washington, D. C.

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*The numbers of the schools correspond with the school numbers in Table 9, Chapter 1, which indicates by year of graduation the number of graduates selected from each school.

26. Camden County Vo-Tech High School
Merchantville, New Jersey

27. Middlesex County Vo-Tech High School
New Brunswick, New Jersey

28. Hutchison-Central Technical High School
Buffalo, New York

29. McKinley Vocational School
Buffalo, New York

30. Saunders Trade and Technical School
Yonkers, New York

31. William E. Grady Vo-Tech High School
Brooklyn, New York

32. Mount Vernon High School
Mount Vernon, New York

33. Erie Technical Memorial High School
Erie, Pennsylvania

34. Connelley Vocational High School
Pittsburgh, Pennsylvania

35. Williamsport Technical Institute
Williamsport, Pennsylvania

III. GREAT LAKES

36. Mount Vernon Township High School
Mount Vernon, Illinois

37. Alton Senior High School
Alton, Illinois

38. North High School
Evansville, Indiana

39. Eastern High School
Lansing, Michigan

40. Central High School
Pontiac, Michigan

41. Patterson Cooperative High School
Dayton, Ohio

42. Lima Senior High School
Lima, Ohio

43. Norwood High School
Norwood, Ohio

44. Dunbar Vocational High School
Chicago, Illinois

45. Chicago Vocational High School
Chicago, Illinois

46. Gerstmeyer Technical High School
Terre Haute, Indiana

47. Washington Trade School
Detroit, Michigan

48. Anderson High School
Anderson, Indiana

49. Max S. Hayes Trade School
Cleveland, Ohio

50. Macomber Vocational High School
Toledo, Ohio

IV. PLAINS

51. Davenport Central High School
Davenport, Iowa

52. Des Moines Technical High School
Des Monies, Iowa

53. Poplar Bluff Senior High School
Poplar Bluff, Missouri

54. Topeka Trade School
Topeka, Kansas

55. Minneapolis Area Vo-Tech School
Minneapolis, Minnesota

56. O'Fallon Technical School
St. Louis, Missouri

57. Springfield Vo-Tech Industrial
Springfield, Missouri

V. SOUTHEAST

58. Anniston High School
Anniston, Alabama

59. Murphy High School
Mobile, Alabama

60. Hot Springs High School
Hot Springs, Arkansas

61. Northwestern Senior High School
Miami, Florida

62. Dixie Hollins Comprehensive High School
St. Petersburg, Florida

63. Pascagoula High School
Pascagoula, Mississippi

64. Hillside High School
Durham, North Carolina

65. New Hanover High School
Wilmington, North Carolina

66. T. L. Hanna High School
Anderson, South Carolina

67. Wilson High School
Florence, South Carolina

68. Howard High School
Chattanooga, Tennessee

69. Fulton High School
Knoxville, Tennessee

70. Memphis Technical School
Memphis, Tennessee

71. Maggie Walker High School
Richmond, Virginia

72. Jefferson High School
Roanoke, Virginia

73. Jefferson County Vocational School
Tarrant, Alabama

74. Orange County Vocational School
Orlando, Florida

75. Lively Technical School
Tallahassee, Florida

76. George W. Carver Vocational School
Atlanta, Georgia

77. Jordan Vocational High School
Columbus, Georgia

78. Theodore Ahrens Trade School
Louisville, Kentucky

79. Owensboro Area Vo-Tech School
Owensboro, Kentucky

80. Baton Rouge Vo-Tech School
Baton Rouge, Louisiana

81. Sullivan Memorial Trade School
Bogalusa, Louisiana

82. Gastonia Industrial Education Center
Gastonia, North Carolina

83. Murray Vocational School
Charleston, South Carolina

84. Virginia Mechanics Institute
Richmond, Virginia

85. Wyoming County Vo-Tech School
Pineville, West Virginia

86. McDowell Vocational School
Welch, West Virginia

VI. SOUTHWEST

87. Tucson High School
Tucson, Arizona

88. Jay High School
Jay, Oklahoma

89. Capitol Hill High School
Oklahoma City, Oklahoma

90. Duncan Senior High School
Duncan, Oklahoma

91. Brownsville High School
Brownsville, Texas

92. Denison High School
Denison, Texas

93. John Tyler High School
Tyler, Texas

94. El Paso Technical High School
El Paso, Texas

VII. ROCKY MOUNTAINS

95. William J. Palmer High School
Colorado Springs, Colorado

VIII. PACIFIC

96. Las Vegas High School
Las Vegas, Nevada

97. Benson Polytechnic High School
Portland, Oregon

98. Fremont High School
Los Angeles, California

99. John A. O'Connell Vocational High School
San Francisco, California

100. Pacific High School
San Bernardino, California

CHAPTER 2 SUMMARY

Procedure for Sample Correction

10. Logic of sample correction. The necessity for considering sample correction was recognized, and the general logic of such correction was described.

11. Sample correction for non-respondents. A five per cent corrective sample of vocational (N = 136) and academic non-respondents (N = 37) was selected for intensive follow-up. The returns were respectively 66 per cent (N = 90) and 65 per cent (N = 24). Consult text for correction procedure.

12. Sample correction for address unknowns. A five per cent corrective sample of vocational (N = 132) and academic (N = 48) address unknowns was selected for intensive search. The returns were respectively 51 per cent (N = 68) and 46 per cent (N = 22). Consult text for correction procedure.

CHAPTER 3 SUMMARY

Derived Measure Intercorrelations

9. Occupational measures. Of the 45 potential interrelationships between the occupational measures, 16 were established by the standard of interpretation adopted. Consult the text for details of the intercorrelational analysis.

10. Non-occupational measures. Of the 28 potential relationships between the non-occupational measures, 7 were established by the standard of interpretation adopted. Consult the text for details of the intercorrelational analysis.

11. Occupational-non-occupational measures. Of the 80 potential relationships between occupational and non-occupational measures, 17 were established by the standard of interpretation adopted. Consult the text for details of the intercorrelational analysis.

CHAPTER 5 SUMMARY

Reasons for Not Getting Job in Trade Studied

12. Year of graduation. In order of frequency, the reasons given for not getting jobs in same or highly related trades were: (1) no jobs available, (2) liked other work more, (3) not accepted as apprentice, and (4) insufficient pay.

13. Type of school. No significant differences in reasons given for not getting job in trade studied between graduates of vocational and comprehensive schools.

14. Enrollment of school. Reasons given for not getting job in trade vary with school enrollment; e.g., smaller percentage of large enrollment school graduates give the reason "no job available."

15. Race of graduate. A substantially larger percentage of Negro than white graduates reported that no job was available in the trade studied. Also, Negroes reported that they were not accepted into an apprenticeship program.

Opinion of How Well Prepared for the Trade

16. Year of graduation. Graduates of all class years who went into the trades studied or highly related trades reported they were well prepared by their high school training.

17. Type of school. Comprehensive and vocational school graduates had an equally high opinion of how well they were prepared for the trade.

18. Enrollment of school. Small, medium, and large enrollment schools had an equally high opinion of how well they were prepared for the trade.

19. Race of graduate. The analysis was omitted because too few Negroes reported they obtained their first job in the trade studied or allied trade.

Methods Used to Get First Job

20. Year of graduation. The rank order of the top six acknowledged sources of help in finding the first job was: (1) friend or relative (38%), (2) school teacher (18%), (3) school placement service (10%), (4) school coop programs (9%), (5) answering want ads (7%), and (6) school counselor (5%).

21. Type of school. Vocational school graduates acknowledge help in finding the first job to school sources more frequently than comprehensive school graduates.

22. Enrollment of school. The size of school enrollment is, with one exception, unrelated to the frequency with which different sources of job placement are acknowledged.

23. Race of graduate. Negro graduates report less job placement help from school sources than do white graduates. They rely more on the help of friends and relatives.

24. Type of graduate. Academic graduates receive much less help from school sources in finding a first job than vocational graduates.

CHAPTER 6 SUMMARY

A General Conclusion

7. Changes in shop equipment, methods, and materials. The data raise a question about a massive effort to re-equip vocational shops on the grounds that graduates are seriously handicapped because of obsolete equipment, unrealistic work methods, and substitute materials.

CHAPTER 7 SUMMARY

Where Most Was Learned About Skills

8. Year of graduation. The percentage of graduates who report that on-the-job was the source of learning most about trade skills increases with increased years out of school, as should be the case. Some skills are mostly acquired in school; e.g., mathematical skills, manual job skills, theoretical job knowledge, communication skills, and reading and interpretive skills. Other skills are mostly acquired on-the-job; e.g., practical job knowledge, clerical skills, personal relation skills, and supervisory skills.

9. Type of school. In general, a greater percentage of vocational school graduates claim they learned most of the basic skills in high school than academic school graduates.

10. School enrollment. A greater percentage of the vocational graduates from small enrollment schools than of those from medium and large enrollment

schools claimed they learned most of their trade skills in school. This suggests more trade skills are learned in small enrollment schools.

Need for More Basic Skill Training

11. Year of graduation. The percentage of graduates claiming need for additional training reflects both type of skill and years out of school. The need for additional training is greatest in supervisory skills, mathematical skills, and reading-interpretive skills. The data indicate a substantial percentage claimed need for more training in all basic skill areas.

12. Type of school. There are no substantial differences between graduates of vocational and comprehensive schools in terms of expressed need for additional training in the basic skill areas.

13. School enrollment. There is a consistent pattern which suggests that graduates from medium enrollment schools feel less need for additional skill training than those from small and large enrollment schools.

14. Training needs by trade. An analysis of training needs by trade makes clear that training needs vary by trade. For example, 77 per cent of machinists report the need for additional training in mathematics; whereas, only 25 per cent of the welders report such a need. The data indicate why one can't make blanket statements about the training needs of all T&I vocational graduates.

CHAPTER 9 SUMMARY

Analysis of Number of Jobs Held

11. Year of graduation. The mean number of full-time jobs held by 1953, 1958, and 1962 graduates respectively is 3.08, 2.48, and 1.96. Vocational graduates do not do much moving from employer to employer.

12. Type of school. There is no significant difference in mean number of jobs held between vocational and comprehensive school graduates.

13. School enrollment. There is no significant difference in mean number of jobs held between graduates of small, medium, and large enrollment schools.

14. Race of graduates. There is no significant difference in mean number of jobs held between Negro and white vocational graduates.

15. Academic graduates. There is no significant difference in number of full-time jobs held between academic and vocational graduates.

Analysis of Job Satisfaction

16. Year of graduation. Job satisfaction is expressed as the mean satisfaction rating given by the graduates to all full-time jobs held. The job satisfaction of 1953, 1958, and 1962 graduates was not significantly different. Mean job satisfaction scores indicate vocational graduates, as a group, are well satisfied with the jobs they hold.

17. Type of school. There is no significant difference in job satisfaction between graduates of vocational and comprehensive schools.

18. School enrollment. There is no significant difference in job satisfaction reported by graduates of small, medium, and large enrollment schools.

19. Race of graduates. Negro vocational graduates report less job satisfaction than white vocational graduates.

20. Academic graduates. There is no significant difference in reported job satisfaction between academic and vocational course graduates.

Analysis of Job Relatedness

21. Year of graduation. Job relatedness is expressed as the mean of the ratings given by graduates to each full-time job held for its relatedness to the trade studied in high school. There is no significant difference in the mean job relatedness reported by graduates of 1953, 1958, and 1962. The job relatedness means indicate that the average job held is only "slightly related" to the trade studied in high school.

22. Type of school. Vocational school graduates have a slightly higher mean job relatedness score than comprehensive school graduates. They are more likely to work in jobs related to the trade studied in high school.

23. School enrollment. There is no substantial difference in mean job relatedness scores for graduates of small, medium, and large enrollment schools.

24. Race of graduates. Negro graduates have a significantly lower mean job relatedness score than white vocational graduates.

Analysis of Initial Earnings

25. Year of graduation. For graduates of 1953, 1958, and 1962 respectively, the mean first-job starting hourly rates were 1.38, 1.50, and 1.47 dollars.

26. Type of school. Vocational school graduates had slightly higher starting hourly rates on their first full-time jobs than comprehensive school vocational graduates.

27. School enrollment. There is no significant difference in first-job starting hourly wages between graduates from small, medium, and large enrollment schools.

28. Race of graduates. There is no significant difference in first job starting hourly wages between Negro and white graduates.

29. Academic graduates. When graduates without college education are compared, there is no significant difference in first-job starting hourly earnings between academic and vocational graduates.

Analysis of Present Earnings

30. Year of graduation. For graduates of 1953, 1958, and 1962 respectively, the mean present (June, 1964) hourly earnings are 3.08, 2.49, and 2.01 dollars. Those working in the trades studied in high school tend to earn more than those in wholly different trades.

31. Type of school. There is no significant difference in present earnings between graduates from vocational and comprehensive schools.

32. School enrollment. Mean present hourly earnings reported by graduates is related to former school enrollment; i.e., the greater the school enrollment of the former school, the greater present earnings. Alternative interpretations are given.

33. Race of graduate. The present earnings of Negro vocational graduates are substantially less than those of white vocational graduates.

34. Academic graduates. When graduates with no college education are compared, the vocational graduates have higher present earnings after two and six years out of school than do the academic graduates, but the latter catch up in earnings after eleven years out of school.

CHAPTER 10 SUMMARY

Accumulated College Education (continued)

9. Race of graduates. Negro vocational graduates who attended college accumulated more class hours of college education than white vocational graduates.

10. Academic versus vocational graduates. Academic graduates who attended college accumulated substantially more class hours of college education than vocational graduates.

Accumulated Non-College Education

11. Year of graduation. The three classes of graduates cannot be compared in terms of accumulated class hours of non-college education because of unequal time opportunity. The greatest amount of class hours are accumulated in private trade-technical schools.

12. Type of school. Vocational graduates of comprehensive schools accumulate more class hours of non-college education than the graduates of vocational schools.

13. School enrollment. There is no significant difference between graduates of small, medium, and large enrollment schools in terms of mean accumulated hours of non-college, post-high school education.

14. Race of graduates. Negro graduates who attended non-college sources of post-high school education accumulated fewer class hours of such education than white vocational graduates.

15. Academic versus vocational graduates. Of those who reported post-high school, non-college level education, there is no significant difference between academic and vocational graduates, in terms of class hours of such education accumulated.

CHAPTER 11 SUMMARY

The Graduate's Leisure Activities (continued)

9. Type of school. There is no difference in the range of leisure activities or the type of leisure activities engaged in by graduates of comprehensive and vocational schools.

10. School enrollment. There is no difference in range or type of leisure activities engaged in by graduates from small, medium, and large enrollment schools.

11. Race of graduate. Negro graduates report a broader range of leisure activities than white graduates. There are also differences in the emphasis placed on individual activities.

12. Academic versus vocational graduate. A comparison of the two types of graduates who had no college indicates no difference in range of leisure activities. There is also little difference in individual types of leisure activities between the two types of graduates.

The Graduate's Organization Affiliation

13. Year of graduation. There is a slight increase in organization affiliation with increased years out of school. The graduates are overwhelmingly non-members and inactive members. Most active affiliation is with religious, labor, and athletic organizations. Least active affiliation is with cultural, civic, and community-service organizations.

14. Type of school. There is no difference in degree of organization affiliation between vocational graduates of comprehensive and vocational schools.

15. School enrollment. There is no difference in degree of organization affiliation between graduates of small, medium, and large enrollment schools.

16. Race of graduate. Negro graduates have a slightly greater degree of organization affiliation than white graduates. The difference is not substantial.

17. Academic versus vocational graduates. A comparison of the two types of graduates who have had no college education reveals no significant difference in degree of organization affiliation. Affiliation with individual organizations also fails to be significantly different.

Over-All Conclusion

18. Academic versus vocational graduates. When education of the whole person is defined in terms of conversational interests, leisure activities, and affiliation with community organizations, there is no evidence that suggests vocational graduates have been less wholly educated than academic graduates.

CHAPTER 12 SUMMARY

Military Service Among Graduates

12. Year of graduation. The percentage of 1953, 1958, and 1962 vocational graduates who reported military service is 70, 59, and 31 per cent respectively.

13. Type of school. There is no significant difference between graduates of vocational and comprehensive schools in terms of percentage reporting military service.

14. School enrollment. A slightly greater percentage of small enrollment school graduates reported military service than those from medium and large enrollment schools.

15. Race of graduate. Eight per cent fewer Negro graduates reported military service than white graduates. No data are available on the number of either race rejected from military service.

CORRECTIVE STUDY SAMPLE

Introduction

Of the 10,798 vocational graduates that constituted the survey sample, 50.5 percent (5434) returned questionnaires, 24.5 percent (2632) could not be located through the mails, and 25.0 percent (2732) were assumed to be unwilling to respond because mailings were accepted, but questionnaires were not forthcoming. These facts made it necessary to adopt a procedure for correcting the sample returns for address unknown cases and for non-respondent cases. Accordingly, two correction samples of address unknown cases and non-respondent cases were obtained for the purpose of correcting bias in the original, uncorrected sample. The details of how these cases were obtained through intensified search and persuasion, and the results of such efforts, are described in Chapter 2.

Correction Strategy

Sample correction was considered for each of the occupational measures, e.g. employment security, job stability, general placement, related placement, etc., and for the non-occupational measures, e.g. conversational interests, leisure activities, organizational affiliation, and others.

For each year of graduation, the above measures were calculated for the (1) address unknown correction sample usable returns, (2) non-respondent correction sample usuable returns, and (3) the combined address unknown—non-respondent correction samples. In addition, the measure values were already available from the uncorrected sample.

The strategy for determining whether the original sample values required correction was to test the differences between original (uncorrected) sample means and their corresponding three correction sample means. This was done by means of the t test for significance of differences between means. The absence of significant differences at the five percent or greater level of confidence was the basis for deciding that correction of the original sample means was not required. The absence of such significant differences meant one could not with confidence reject the hypothesis that both uncorrected and correction sample means were random samples from the same population, and that the differences were attributable to sampling error. Where significant differences were revealed by the t test, the original sample means were corrected for the implied bias by the procedure described in the next section.

Correction Procedure[1]

Where t test results indicated the need for correction, the correction of original sample values was applied by the following equation:

$$X_c = \frac{N_o X_o + \frac{n_2}{.05p_2} X_{AU} + \frac{n_3}{.05p_3} X_{NR}}{N_t}$$

Where:

X_c = Corrected mean

N_o = Number of cases in original, uncorrected sample

X_o = Mean obtained from original, uncorrected sample

N_2 = Number of usable address unknown correction sample returns

.05 = 5% address unknown correction sample; also 5% non-respondent correction sample

p_2 = Proportion of address unknown 5% correction sample for which a return was secured

X_{AU} = Mean obtained from address unknowns correction sample

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[1] The rationale for correction of the original sample was provided by Marion F. Shaycoft of Project Talent, a study conducted by the University of Pittsburgh and the American Institutes for Research.

N_3 = Number of usable non-respondent correction sample returns

P_3 = Proportion of non-respondent 5% correction sample for which a return was secured

X_{NR} = Mean obtained from non-respondents correction sample

N_t = Total number of cases

It should be pointed out that the usuable correction sample returns were somewhat less than the actual returns reported in Chapter 2. Questionnaires with substantial omissions or information that suggested the respondent was not taking the questionnaire seriously were not processed.

The logic of the correction procedure implied by the above procedure is to weight the address unknown and non-respondent correction sample values in proportion to the total number of such cases and the magnitude of the returns involved in the two types of correction sample. The corrected value is then an estimate of what the value would have been had all cases surveyed responded.

OCCUPATIONAL MEASURES

Employment Security

The employment security measure indicates the percentage of employable time between graduation and June, 1964 that was spent in full-time employment. Table A-1 below provides the mean employment security values obtained for the correction sample as a whole, and for the address unknown and non-respondent sub-groups. The uncorrected sample means, reported in Chapter 9, are also shown. The employment security means obtained from the five percent correction sample are slightly greater than the equivalent means obtained from the 51 percent uncorrected sample. The lower section of the table provides the _t_ values obtained from testing for significance of difference between:

1. Uncorrected sample and correction sample (_t_ 1-2)
2. Uncorrected sample and address unknown sample (_t_ 1-3)
3. Uncorrected sample and non-respondent sample (_t_ 1-4)
4. Address unknown sample and non-respondent sample (_t_ 3-4)

Table A-1. EMPLOYMENT SECURITY: UNCORRECTED, CORRECTION AND CORRECTED DATA: ALSO _t_ TEST RESULTS

EMPLOYMENT SECURITY	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1026	92.67	15.64	1421	87.30	20.21	1701	84.00	23.18
2. Combined correction sample	39	94.49	13.27	54	90.32	16.02	35	90.26	14.93
3. Add. unkn. correction sample	24	94.79	10.82	26	87.54	19.58	10	84.50	17.94
4. Non-resp. correction sample	15	94.00	16.45	28	92.89	11.18	25	92.56	12.84
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2		.72			1.08			1.59	
_t_ 1-3		.66			.06			.07	
_t_ 1-4		.33			1.46			1.84	
_t_ 3-4		.18			1.22			1.44	

None of the mean employment security differences tested proved to be significant. The conclusion is that it is not necessary to correct the original uncorrected sample.

Employment Stability

The employment stability measure describes the average number of months per full-time job held with a given employer. Table A-2 compares the mean employment stability values obtained from the main uncorrected sample with the equivalent values obtained from the total correction sample and the address unknown and the non-respondent correction samples. The employment stability means obtained from the correction sample are slightly higher than those obtained from the uncorrected sample. The _t_ test results, however, indicate that differences in mean values failed, with one exception, to attain

Table A-2. EMPLOYMENT STABILITY: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

JOB STABILITY	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1038	46.52	34.93	1416	26.12	19.10	1685	12.57	7.45
2. Combined correction sample	39	48.36	34.62	54	24.26	18.54	35	14.77	7.06
3. Add. unkn. correction sample	24	49.17	33.70	26	23.73	18.91	10	11.30	7.95
4. Non-resp. correction sample	15	47.07	36.01	28	24.75	18.16	25	16.16	6.14
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2	.32			.70			1.73		
_t_ 1-3	.37			.63			.54		
_t_ 1-4	.06			.38			2.40*		
_t_ 3-4	.18			.20			1.88		

* Significant at 5 percent level of confidence.

significance at the five percent or better level of confidence. The exception was the mean employment stability of the 1962 uncorrected sample compared with the 1962 non-respondent correction sample. The overall lack of significant differences between the uncorrected and correction sample means justify, in our opinion, the conclusion that no correction is required for the original sample.

Number of Jobs Held

The number of full-time jobs held with different employers since graduation from high school was considered another reflection of employment stability. The original, uncorrected sample indicated that vocational course graduates did not do much jumping from employer to employer. Table A-3 compares the mean number of jobs held values obtained from the uncorrected sample with those obtained from the correction sample as a whole, and those obtained from the address unknown and non-respondent correction sample sub-groups.

Table A-3. NUMBER OF JOBS HELD: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO *t* TEST RESULTS

NUMBER OF JOBS HELD	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1114	3.08	1.84	1491	2.48	1.50	1764	1.96	1.14
2. Combined correction sample	44	2.91	1.55	57	2.58	1.77	35	1.74	0.90
3. Add. unkn. correction sample	25	2.84	1.46	26	2.23	1.89	10	2.10	1.14
4. Non-resp. correction sample	19	3.00	1.65	31	2.87	1.60	25	1.60	0.75
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2		.60			.49			1.13	
t 1-3		.65			.84			.39	
t 1-4		.19			1.43			1.57	
t 3-4		.33			1.36			1.48	

The t test results lead to the conclusion that correction of the original sample is unnecessary. The correction sample means, without exception, fail to attain a significance of difference at the five percent or better level of confidence. Accordingly, no correction of the original sample was undertaken.

General Placement

This measure provides the mean time in months required by graduates to obtain their first full-time job after graduation. The measure is a reflection, in part, of school efforts to place graduates.

Table A-4 compares the mean months required to get the first full-time job obtained from the original, uncorrected sample with comparable values obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction sample. The t test results indicate that the address unknown and non-respondent correction sample means are not significantly different. Moreover, when the sub-samples are combined into a single correction sample, the resulting means are not significantly different from the original, uncorrected sample means. None of the t values are signif-

Table A-4. GENERAL PLACEMENT: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

GENERAL PLACEMENT	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	946	1.26	2.63	1193	2.29	4.02	1807	1.70	2.77
2. Combined correction sample	37	0.71	1.21	46	1.94	3.24	33	1.54	2.70
3. Add. unkn. correction sample	22	0.73	1.25	19	1.68	2.37	8	1.20	1.47
4. Non-resp. correction sample	15	0.67	1.15	27	2.12	3.72	25	1.64	2.98
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2		1.27			.58			.33	
t 1-3		.94			.66			.51	
t 1-4		.87			.22			.11	
t 3-4		.14			.44			.39	

icant at the five percent or better level of confidence. The conclusion is that the original sample means for this measure do not require correction for address unknown and non-respondent cases.

Related Placement

The related placement measure is a composite of months required to obtain the first full-time job after graduation and how related that job was to the trade studied in high school. Consult Chapter 3 for the equation used to calculate the measure.

Table A-5 compares the mean related placement values obtained from the original, uncorrected sample with comparable values obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction sample. The t test results, reported in the lower half of the table, reveal no significant difference between address unknown and non-respondent correction sample means. Moreover, there are no significant differences between original sample means and correction sample means for the 1953 and 1958 graduates. However, the 1962 graduates reveal a different picture. The original sample mean of 42.2 is significantly greater than the correction sample mean of 35.8. The t value of 3.04 is significant at better than the 1 percent level of confidence. Accordingly, the related placement mean obtained for 1962 graduates

Table A-5. RELATED PLACEMENT: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

RELATED PLACEMENT	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	915	47,43	32.30	1126	37.75	29.81	1672	42.22	30.68
2. Combined correction sample	37	49.14	29.76	46	34.20	27.42	33	25.91	17.51
3. Add. unkn. correction sample	22	47.54	28.74	19	40.37	30.11	8	25.50	19.77
4. Non-resp. correction sample	15	51.47	31.03	27	29.85	24.43	25	26.04	16.73
5. Corrected sample		NC			NC		4199	35.78	-
SIGNIFICANCE TESTS									
t 1-2		.32			.79			3.04**	
t 1-3		.02			.38			1.54	
t 1-4		.48			1.36			2.63**	
t 3-4		.38			1.28			.07	

** Significant at 1 percent or better level of confidence.

was corrected by the procedure explained earlier in this section of the Appendix. The corrected sample mean is shown on line five of the table. It indicates a lower related placement performance than was originally thought to be the case.

Table A-6 provides the percentages of graduates placed into the same trade studied, highly related trades, slightly related trades and completely unrelated trades for (1) the original uncorrected sample, (2) the combined address unknown—non-respondent correction sample, and (3) the corrected sample. For all graduates, the corrected sample percentage placed in the same trade is 25.0 percent, whereas, the percentage placed in a completely unrelated trade is 41.3 percent.

Table A-6. UNCORRECTED, CORRECTION AND CORRECTED SAMPLE DATA ON PERCENTAGE OF GRADUATES PLACED INTO EACH OF FOUR CATEGORIES OF RELATIONSHIP BETWEEN FIRST JOB HELD AND TRADE STUDIED IN HIGH SCHOOL

FIRST JOB HELD	NATURE OF SAMPLE FROM WHICH PERCENTAGE VALUES WERE OBTAINED	YEAR OF GRADUATION							
		1953		1958		1962		Combined	
		N	%	N	%	N	%	N	%
SAME TRADE	1. Uncorrected sample	301	32.6	313	27.6	498	29.6	1118	29.8
	2. Total correction sample	11	25.0	15	26.3	1	2.8	27	19.8
	3. Non-resp. corr. sample	4	21.0	7	23.3	1	4.0	12	16.2
	4. Add. unkn. corr. sample	7	28.0	8	29.6	0	0.0	15	24.2
	5. Corrected sample	-	-	-	-	-	-	2699	25.0
HIGHLY RELATED TRADE	1. Uncorrected sample	168	18.2	189	16.6	333	19.8	691	18.4
	2. Total correction sample	11	25.0	5	8.8	6	17.1	22	16.2
	3. Non-resp. corr. sample	7	36.8	1	3.3	3	12.0	11	14.9
	4. Add. unkn. corr. sample	4	16.0	4	14.8	3	30.0	11	17.7
	5. Corrected sample	-	-	-	-	-	-	1868	17.3
SLIGHTLY RELATED TRADE	1. Uncorrected sample	150	16.3	164	14.4	229	13.6	544	14.5
	2. Total correction sample	7	15.9	10	17.5	8	22.8	25	18.4
	3. Non-resp. corr. sample	2	10.5	5	16.7	7	28.0	14	18.9
	4. Add. unkn. corr. sample	5	20.0	5	18.5	1	10.0	11	17.7
	5. Corrected sample	-	-	-	-	-	-	1771	16.4
COMPLETELY UNRELATED TRADE	1. Uncorrected sample	303	32.9	470	41.4	625	37.1	1402	37.3
	2. Total correction sample	15	34.1	27	47.4	20	57.1	62	45.6
	3. Non-resp. corr. sample	6	31.6	17	56.7	14	56.0	37	50.0
	4. Add. unkn. corr. sample	9	36.0	10	37.0	6	60.0	25	40.3
	5. Corrected sample	-	-	-	-	-	-	4460	41.3

The importance of the concept of related placement for vocational educational evaluation should give pause in unqualified acceptance of the correction. It must be pointed out that the correction sample is only 3 percent of the original, uncorrected sample. One can question the adequacy of the correction sample from the standpoint of the small numbers involved. In any event, it is reasonable to conclude that between 25 and 29.8 percent of the graduates are placed in the same trade studied in high school, between 17.3 and 18.4 percent of the graduates are placed in highly related trades, between 14.5 and 16.4 percent are placed into slightly related trades, and between 37.3 and 41.3 percent are placed into completely unrelated trades.

Job Relatedness

The measure is the mean of the relatedness ratings given to each job held. Jobs were rated 4 if they were in the same trade as the one studied in high school, 3 if in a highly related trade, 2 if in a slightly related trade or occupation, and 1 if in a completely unrelated trade or occupation.

Table A-7 compares the mean relatedness values obtained from the original, uncorrected sample with those obtained from the address unknown, the

Table A-7. JOB RELATEDNESS: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO *t* TEST RESULTS

JOB RELATEDNESS	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1106	2.26	1.01	1473	2.20	1.05	1736	2.33	1.11
2. Combined correction sample	44	2.21	0.91	56	2.06	1.01	35	1.71	0.85
3. Add. unkn. correction sample	25	2.20	0.92	26	2.22	1.07	10	2.05	0.88
4. Non-resp. correction sample	19	2.21	0.89	30	1.92	0.95	25	1.58	0.80
5. Corrected sample		NC			NC		4199	2.11	-
SIGNIFICANCE TESTS									
t 1-2		.32			.98			3.28**	
t 1-3		.29			.10			.80	
t 1-4		.21			1.45			3.36**	
t 3-4		.04			1.09			1.48	

** Significant at 1 percent or better level of confidence.

non-respondent, and the combined address unknown—non-respondent correction samples. The t test results, reported in the lower half of the table, reveal no significant difference between address unknown and non-respondent correction sample means. However, consistent with the findings on related placement, there is a significant difference between the 1962 uncorrected sample mean and the 1962 correction sample mean. Accordingly, the corrected sample mean is reported in line 5 of the table. The downward correction of this measure is not substantial, and applies only for the 1962 graduates.

Job Satisfaction

The job satisfaction measure is the mean of satisfaction ratings made by vocational graduates for each full-time job held. The original, uncorrected sample indicated a relatively high degree of rated job satisfaction. The mean ratings obtained from the correction sample indicate no need to change the conclusions about this measure that were drawn from the original, uncorrected sample. Table A-8 compares the mean job satisfaction ratings obtained from the original sample with those obtained from the address unknown and non-respondent correction samples, separately and combined into a single correction sample. With one exception, none of the sixteen t

Table A-8. JOB SATISFACTION: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

JOB SATISFACTION	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1107	3.19	0.61	1473	3.13	0.66	1743	3.06	0.74
2. Combined correction sample	44	3.20	0.57	56	3.12	0.80	34	3.16	0.54
3. Add. unkn. correction sample	25.	3.04	0.55	26	3.30	0.78	9	2.92	0.29
4. Non-resp. correction sample	19	3.42	0.53	30	2.97	0.78	25	3.24	0.59
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2		.11			.11			.78	
t 1-3		1.22			1.30			.57	
t 1-4		1.63			1.31			1.21	
t 3-4		2.25*			1.55			1.51	

* Significant at 5 percent level of confidence.

test results proved to be significant at or beyond the five percent level of confidence. Accordingly, no correction of the original sample means was undertaken for this measure.

Number of Moves to Other Cities

This measure indicates the mean number of moves to new cities made by vocational graduates to either obtain employment or to improve their employment status. The uncorrected sample findings indicated that such moves were extremely infrequent. The great majority of graduates do not move to other cities to improve their employment status. This conclusion, however, was on weak grounds as long as one did not have comparable data on the address unknown cases which constituted 24.5 percent of the total sample and the non-respondents cases which constituted 25 percent of the sample. Table A-9 compares the mean number of new city moves reported by vocational graduates in the original, uncorrected sample with comparable means obtained from the address unknown, the non-respondent and the combined address unknown—non-respondent correction sample. Of the sixteen mean difference comparison, none produced _t_ values that were significant at the five percent or better level of confidence.

Table A-9. NUMBER OF MOVES TO OTHER CITIES: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

NUMBER OF MOVES TO OTHER CITIES	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1037	.424	.833	1394	.316	.673	1666	.185	.521
2. Combined correction sample	42	.310	.597	56	.288	.822	34	.147	.429
3. Add. unkn. correction sample	24	.292	.611	25	.125	.590	10	.200	.400
4. Non-resp. correction sample	18	.333	.577	31	.419	1.009	24	.125	.439
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2		.88			.30			.42	
_t_ 1-3		.77			1.41			.09	
_t_ 1-4		.46			.83			.56	
_t_ 3-4		.22			1.27			.45	

Accordingly, it was concluded that the mean values derived from the original sample for this measure do not require correction. Oddly, the address unknown cases in the correction sample reported fewer new city moves than the original sample graduates. The address unknown problem was particularly acute in the major metropolitan areas. These results suggest that such cases merely moved to other parts of city without leaving forwarding addresses.

Job Mobility Index

The employment mobility measure is a composite that reflects number of moves to other cities to improve employment status plus the distances moved. Consult Chapter 3 for the equation used to calculate the measure.

Table A-10 compares the mean employment mobility values obtained from the original sample with those obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction samples. The t test results, reported in the lower half of the table, indicate that the mean differences are not significant at the five percent or better level of confidence. There are substantial differences in variances for the 1953 and 1958 comparisons. The conclusion is that the employment mobility values obtained for the original sample need not be corrected for address unknown and non-respondent cases.

Table A-10. JOB MOBILITY INDEX: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

JOB MOBILITY INDEX	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	959	2.06	10.45	1322	1.00	5.45	1605	0.45	3.22
2. Combined correction sample	41	0.49	2.15	54	4.26	26.04	33	0.61	3.43
3. Add. unkn. correction sample	23	0.43	2.04	25	8.40	41.19	9	0.00	0.00
4. Non-resp. correction sample	18	0.56	2.29	29	3.10	14.65	24	0.83	4.00
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2		.96			.91			.28	
t 1-3		.75			.88			.42	
t 1-4		.61			1.93			.57	
t 3-4		.19			.60			.60	

Initial Earnings

The initial earnings measure describes the mean dollars per hour earned by vocational course graduates at the start of their first full-time job. Table A-11 compares the initial earnings values obtained from the original sample with those obtained from the correction sample for the graduates of 1953, 1958, and 1962. None of the initial earnings mean differences attained significance at the five percent or better level of confidence. Accordingly, no correction of the original sample means was undertaken for this measure.

Table A-11. INITIAL EARNINGS: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

INITIAL EARNINGS	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1034	1.38	0.54	1401	1.50	0.56	1669	1.47	0.55
2. Combined correction sample	38	1.30	0.41	52	1.54	0.53	33	1.45	0.27
3. Add. unkn. correction sample	21	1.25	0.29	25	1.60	0.53	9	1.44	0.35
4. Non-resp. correction sample	17	1.36	0.52	27	1.49	0.52	24	1.45	0.24
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2	.90			.51			.21		
t 1-3	1.10			.89			.16		
t 1-4	.15			.09			.18		
t 3-4	.80			.74			.09		

Present Earnings

The present earnings measure describes the mean dollars per hour earned by the vocational graduates as of June, 1964, that is, after eleven, six or two years out of school depending upon year of graduation. Table A-12 compares the present earnings means obtained from the original, uncorrected sample with those obtained from the address unknown, non-respondent, and combined correction samples. The t test results indicate that no mean difference test attained significance at the five percent or better level of confidence. It was concluded that uncorrected and correction means were drawn from the same population, and that no correction of the uncorrected present earnings means was necessary.

Table A-12. PRESENT EARNINGS: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

PRESENT EARNINGS	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1037	3.08	1.00	1422	2.49	0.81	1697	2.01	0.69
2. Combined correction sample	37	3.09	1.04	53	2.48	1.02	32	2.11	0.71
3. Add. unkn. correction sample	20	3.14	0.94	23	2.49	0.81	8	2.06	0.54
4. Non-resp. correction sample	17	3.04	1.15	30	2.48	1.15	24	2.13	0.76
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2	.06			.09			.81		
t 1-3	.27			.00			.20		
t 1-4	.16			.07			.84		
t 3-4	.28			.03			.23		

Earnings Progression

The earnings progression measure describes the mean increase in earnings per month per month of employment. Table A-13 compares the earnings progression means obtained from the original, uncorrected sample, and reported in Chapter 9, with those obtained from the address unknown, the non-respondent and the combined correction sample. The t test results indicate that none of the differences tested are significant at the five percent or better level of confidence. Thus, correction sample means of this measure are not significantly different from the uncorrected sample means. Accordingly, no correction was applied to the original sample data.

Table A-13. EARNINGS PROGRESSION: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

EARNINGS PROGRESSION	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	916	3.22	1.86	1219	3.83	2.75	1401	4.55	3.57
2. Combined correction sample	33	3.22	2.02	40	3.84	3.07	30	4.47	3.86
3. Add. unkn. correction sample	18	3.44	1.71	22	3.99	3.30	7	4.36	2.92
4. Non-resp. correction sample	15	2.95	2.30	18	3.67	2.74	23	4.50	4.10
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2		.00			.02			.12	
t 1-3		.50			.27			.14	
t 1-4		.55			.24			.07	
t 3-4		.68			.32			.08	

NON-OCCUPATIONAL MEASURES

College Education Index

The measure indicates the mean total hours of college education accumulated by those who attended. Table A-14 compares the mean values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction samples. The numbers of cases in the correction samples who attended college are too few to warrant an interpretation of the _t_ values. No correction of original sample means was applied.

Table A-14. COLLEGE EDUCATION: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

COLLEGE EDUCATION	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	243	221.7	161.6	285	175.5	130.3	382	91.9	59.3
2. Combined correction sample	12	206.8	179.7	17	145.8	116.2	4	90.2	53.4
3. Add. unkn. correction sample	8	237.9	188.3	8	147.8	140.5	3	116.3	33.0
4. Non-resp. correction sample	4	144.5	142.0	9	144.1	89.1	1	12.0	0.0
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2		.31			.92			.06	
_t_ 1-3		.28			.59			.71	
_t_ 1-4		.95			.72			1.34	
_t_ 3-4		.80			.06			2.23*	

* Significant at 5 percent level of confidence.

Non-College Education Index

The measure indicates the mean total hours of non-college education accumulated by those who attended specified sources of non-college education. Table A-15 compares the mean values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction sample. The small number of cases in many cells makes the _t_ test of dubious value. Nevertheless, the _t_ values are given. The two values that are "significant" do not warrant interpretation because of the means based on less than 10 cases. No correction of the original sample means was applied.

Table A-15. NON-COLLEGE EDUCATION: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

NON-COLLEGE EDUCATION	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	461	105.9	125.7	601	86.1	111.1	622	67.7	80.9
2. Combined correction sample	11	120.7	103.3	21	73.7	64.8	7	153.6	110.8
3. Add. unkn. correction sample	4	71.8	80.3	8	83.8	74.9	0	-	-
4. Non-resp. correction sample	7	148.7	104.5	13	67.5	56.9	7	153.6	110.8
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2		.39			.51			2.78**	
_t_ 1-3		.54			.06			-	
_t_ 1-4		.89			.60			2.78**	
_t_ 3-4		1.15			.54			-	

** Significant at 1 percent or better level of confidence

Attitude Toward Former High School

The measure is a mean of an attitude score based upon ratings of ten high school factors. Consult Chapter 3 for measure's equation.

Table A-16 compares the mean atitude values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction samples. The t test results, reported in the lower half of the table, reveal no t values significant at the five percent or better level confidence. The conclusion is that the mean attitude-toward-former-high school values obtained from the original sample do not require correction.

Table A-16. ATTITUDE TOWARD FORMER HIGH SCHOOL: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

ATTITUDE TOWARD FORMER HIGH SCHOOL	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1078	2.83	0.58	1469	2.88	0.54	1808	3.00	0.53
2. Combined correction sample	44	2.86	0.53	58	2.77	0.59	35	2.93	0.51
3. Add. unkn. correction sample	25	2.76	0.49	27	2.69	0.59	10	2.70	0.57
4. Non-resp. correction sample	19	2.99	0.55	31	2.84	0.59	25	3.02	0.44
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2	.34			1.52			.77		
t 1-3	.60			1.81			1.78		
t 1-4	1.19			.41			.19		
t 3-4	1.43			.95			1.73		

Conversational Interests Index

The converstional interests measure describes the graduates range of conversational interests. Consult Chapter 3 for a description of the measure.

Table A-17 compares the conversational interest mean values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined correction sample. The _t_ test results, reported in the lower half of the table, indicate no significant differences in mean values. Accordingly, no correction was applied to the corrected sample mean values.

Table A-17. CONVERSATIONAL INTERESTS INDEX: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

CONVERSATIONAL INTERESTS INDEX	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1065	62.38	9.27	1523	61.90	10.14	2258	60.30	10.54
2. Combined correction sample	44	61.20	9.05	58	59.76	9.28	45	60.18	12.79
3. Add. unkn. correction sample	25	62.84	8.65	27	58.59	10.07	13	57.00	14.50
4. Non-resp. correction sample	19	59.05	9.12	31	60.77	8.41	32	61.47	11.79
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2		.83			1.58			.08	
_t_ 1-3		.25			1.68			1.12	
_t_ 1-4		1.55			.62			.62	
_t_ 3-4		1.37			.88			1.05	

Leisure Activity Index

The leisure activities measure describes the graduates' range of active involvement in selected leisure activities. Consult Chapter 3 for a description of the measure.

Table A-18 compares the leisure activity mean values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined correction sample. The _t_ test results, reported in the lower half of the table, indicate no significant differences between appropriate mean values at the five percent or better level of confidence. One can't reject the hypotheses that the samples are drawn from the same population. Accordingly, no correction was applied to the leisure activity mean values obtained from the original sample.

Table A-18. LEISURE ACTIVITY INDEX: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO _t_ TEST RESULTS

LEISURE ACTIVITY INDEX	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1075	54.00	7.86	1496	54.86	8.49	2231	55.06	9.05
2. Combined correction sample	44	52.27	8.02	58	53.36	7.70	45	53.02	8.73
3. Add. unkn. correction sample	25	53.56	8.81	27	52.18	8.59	13	54.85	10.13
4. Non-resp. correction sample	19	50.47	6.44	31	54.39	6.66	32	52.28	7.98
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
_t_ 1-2	1.43			1.32			1.50		
_t_ 1-3	.28			1.62			.08		
_t_ 1-4	1.94			.31			1.73		
_t_ 3-4	1.26			1.08			.88		

Organization Affiliation Index

The organization affiliation measure describes the degree to which graduates become actively involved in community organizations. Consult Chapter 3 for a description of the measure.

Table A-19 compares the organization affiliation mean values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined correction samples. The _t_ test results, reported in the lower half of the table, indicate no significant differences in mean values obtained for the address unknown and non-respondent correction samples. Accordingly, there is justification for combining the two sub-samples into a single correction sample. For 1953 and 1958 graduates, the corrective sample means differ significantly above the one percent level of confidence. Accordingly, correction was applied to the original sample means. The corrected sample means are shown in Table A-19. The magnitude of the correction does not alter the general conclusion presented in Chapter 11, namely (1) graduates are not highly active in community organizations, and (2) active involvement increases with increased years out of school.

Table A-19. ORGANIZATION AFFILIATION INDEX: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO *t* TEST RESULTS

ORGANIZATION AFFILIATION INDEX	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	1128	33.90	6.67	1630	32.24	6.11	2451	31.06	5.84
2. Combined correction sample	44	37.18	8.03	58	33.88	7.35	45	31.16	4.89
3. Add. unkn. correction sample	25	37.84	7.18	27	32.18	4.89	13	30.77	4.44
4. Non-resp. correction sample	19	36.32	8.96	31	35.36	8.69	32	31.31	5.06
5. Corrected sample	2945	35.84	-	3654	33.00	-		NC	
SIGNIFICANCE TESTS									
t 1-2	3.17**			1.99*			.11		
t 1-3	2.91**			.05			.18		
t 1-4	1.56			2.79**			.24		
t 3-4	.61			1.65			.33		

* Significant at 5 percent level of confidence.
** Significant at 1 percent or better level of confidence.

Acknowledged High School Learning

The measure describes how much graduates working in the trade studied claimed to have learned about the trade in high school. Consult Chapter 3 for a description of the measure.

Table A-20 compares the mean acknowledged high school learning values obtained from the original, uncorrected sample with those obtained from the address unknown, the non-respondent, and the combined address unknown—non-respondent correction samples. The mean values obtained from the correction samples are slightly lower than those obtained from the original sample. However, the *t* test results indicate that the differences are not significant at the five percent or better level of confidence. Accordingly, it was not felt necessary to correct the original sample means.

Table A-20. ACKNOWLEDGED HIGH SCHOOL LEARNING: UNCORRECTED, CORRECTION AND CORRECTED DATA; ALSO t TEST RESULTS

ACKNOWLEDGED HIGH SCHOOL LEARNING	YEAR OF GRADUATION								
	1953			1958			1962		
	N	M	SD	N	M	SD	N	M	SD
1. Original uncorrected sample	350	8.15	2.29	515	8.12	2.20	687	8.30	2.50
2. Combined correction sample	15	7.28	1.49	17	7.61	2.26	8	7.36	3.34
3. Add. unkn. correction sample	10	7.14	1.50	10	7.69	2.80	5	6.52	2.44
4. Non-resp. correction sample	5	7.56	1.43	7	7.50	1.11	3	8.77	4.09
5. Corrected sample		NC			NC			NC	
SIGNIFICANCE TESTS									
t 1-2	1.45			.94			1.05		
t 1-3	1.38			.61			1.58		
t 1-4	.57			.74			.32		
t 3-4	-			-			-		

Concluding Remarks About Sample Correction

The strategy of testing for significance of difference between original, uncorrected sample statistics and subsequently obtained correction sample statistics before correcting the former by means of the latter resulted in the need to correct only 3 of the 19 occupational and non-occupational measures. (They were related placement, job relatedness and organizational affiliation). This itself is a strong argument for concluding that there is little, if any, basic difference in matters relevant to the study between the approximately 5,400 graduates who returned questionnaires and the approximately 5,300 graduates who did not, either because they could not be located or were unwilling to complete and return a rather demanding questionnaire.